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ABSTRACT

The papers is this volume were presented at the 1981 World Assembly of the International Council of Education for Teaching, attended by representatives from over 35 nations. The papers are organized in seven sections, and all relate to the theme of the assembly, basic skills development. Section I contains one paper, an address on motivating people for educational change, by W. Clement Stone. Section II presents three papers by Egyptian educators on the educational system in Egypt. The four papers in Section III discuss methods of linking education with economic goals. The fourth section is a paper by a member of the United Nations Educational, Scientific, and Cultural Organization on redirecting educational priorities toward eliminating illiteracy and providing basic education for all individuals. An international perspective on basic education is presented in Section V, with reports from the United States, Nigeria, Great Britain, Kenya, Brazil, Trinidad, Tanzania, Bolivia, and South Korea. The papers in Section VI survey the preparation of teachers in basic education in the United States, Australia, Ireland, and Malaysia. The final section has four papers on methods of relating educational research to practice, using case studies in the United States, Colombia, and Japan. (FG)

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BASIC EDUCATION FOR THE REAL WORLD

INTERNATIONAL PERSPECTIVES
ON HUMAN RESOURCE DEVELOPMENT

Proceedings of the XXVIII ICET
World Assembly
Cairo, Egypt
August 10-14, 1981

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From the President's Pen

The XXVIII World Assembly of the International Council on Education for Teaching brought to Egypt representatives of the education professions from more than 35 countries from North America, South America, Europe, Africa, Australia, and Asia to consider the theme BASIC EDUCATION FOR THE REAL WORLD: INTERNATIONAL PERSPECTIVES ON HUMAN RESOURCE DEVELOPMENT.

This publication presents the ideas and experience of educational leaders, teacher educators, and practitioners from around the world on the role of basic education, especially in developing nations, as the foundation for the assumption of life tasks and responsibilities as well as the continuation of education at higher levels of schooling. In plenary sessions, in panel presentations, and in small group discussions, presenters and participants focused attention on educational developments and educational reform movements designed to prepare children in primary and middle schools for productive citizenship and to provide them with necessary values, codes of behavior, knowledge, skills, and vocational experiences appropriate to the different environments in which they live—urban, rural, desert, industrial. Consideration was given to the attainment of basic education goals not only through the formal system of education but also through non-formal approaches to education for those adults who, through neglect, poverty, isolation, and other factors, have had little or no opportunity to achieve the essential skills, knowledge, and understandings that are inherent in programs of basic education.

Of special importance to the field of teacher education were the opportunities through panel presentations and discussion sessions to explore the role of teacher education and teacher educators in the preparation of personnel who could function at a high level of effectiveness in basic education settings. Other special presentations involved not only teacher educators but individuals from leadership positions in business and industry who shared their experiences and perceptions with the conferees.

The International Council on Education for Teaching, under whose direction the XXVIII World Assembly was conducted, is an international voluntary agency whose primary objective is directly related to the task of preparing those who teach our children and youth, of improving the quality of the teaching profession, and of making the profession responsible to the needs of society. In the

achievement of these goals, ICET serves, in effect, as a global voice of those concerned with the preparation of teaching personnel.

ICET, through its network of colleges, universities, educational organizations, and individuals, provides a unique source of expertise to assist the citizens—children, youth, and adults. As the nations of the world continue to improve the quality of teaching and to expand educational opportunity, they move closer to offering to each individual the chance to develop maximum potential, of assuring to each person freedom of choice, and of improving the quality of life for all members of the world community.

Paul H. Masoner
President

Preface

Frank H. Klassen, *Executive Director*

This volume describes and analyses educational reform policies and practices that affect the primary stage of formal education. Basic Education, the term used to describe this reform, has been adopted to be consistent with the definitions that emerged from the UNESCO-UNICEF seminars in Basic Education in Nairobi, 1974, and which have won increasing international acceptance.

The focus of this educational reform is the educational opportunities which students receive from their earliest years, which lay the foundation for subsequent studies, professional career choices, and the ordinary life of a citizen in the modern era. In this sense Basic Education is fundamental to the future educational needs of all children.

Rapid social, political, and economic changes in the past 25 years have placed new demands on educational systems around the world. These changes have necessitated a thorough reassessment of the goals for which educational opportunity is provided, the nature and the needs of the populace to be served, the content and organization of the education, and the most effective delivery systems, (schools, teachers, materials).

In making this reassessment, proponents of Basic Education view education as an important contributor to a nation's social and economic goals. They support the need for the traditional computational, verbal, and communication skills as a necessary part of the curriculum. However, they also emphasize the need to extend the traditional six-year primary school and expand the curriculum to include health, citizenship, and pre-vocational subjects. These "basic" courses prepare the youth for future educational and career choices as well as for a life that is relevant to their environment.

The Council, consistent with this policy, provides a forum for the analysis of these trends from an international perspective. This volume shares with the reader the results of this forum and the implications for teacher education.

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SECTION ONE:
Motivation

Motivating People for Educational Change

W. Clement Stone
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This is an important week in your life. It's an important week in my life. It's an important week in your life, if you are ready and willing to listen. It's my intent to motivate you, everyone of you who are ready to take ACTION. Action is the key word. All men who are slaves will be free. Who among us are not slaves to habits that may be undesirable. Those of us who are in the teaching field can free those who are endeavouring to help free themselves from economic bondage and from other forms of slavery.

As a youngster I learned for myself the two most important principles that every man, woman and child should learn in school but which were not taught. It is amazing that in this century in the development of psychology, educators did not see the obvious. Students have been taught to use memory over principle, instead of how to APPLY the principle. Knowledge is not power. That is fallacious. Knowledge is only potential power. It becomes actual power when applied—just like the motor fuel in your car is not power until you turn on the ignition and step on the accelerator.

The art of motivation, the power of motivation for educational development, is my specific interest. And because I made it my practice many years ago not to waste my time nor the time of my audience, be it on radio, TV, or the written word, I have made it a practice to actually endeavor to motivate individuals while sharing with them the art of motivation.

The art of motivation has not been taught. I will explain.

Throughout the entire history of education, how to recognize, relate, assimilate, and apply principles, particularly in the behavioral sciences, as regards the functioning of the human mind, was not taught. Now what do I mean by that? Everyone recognizes to some degree, principles, techniques, systems, formulas, methods. What I mean is how to use the greatest instruments that were ever conceived, and everyone of you have them, a brain and a nervous system. There is not one of you who ever does anything unless it begins with the conscious or the subconscious, or the interaction of the two, or a response to the nervous system. We have trained persons on how to use the mechanical computer, but until recently, when some of us broke the barrier, teaching how to use the human computer, was not taught.

Now, if it is true that you have a brain and a nervous system, and every living person throughout the entire world has that one thing in common, why not learn how to use it? It is true you do use it. If I were training individuals who had serious problems or who were searching, I might stand up and say: "If you have a magic wand and could have anything in life you desired, that did not violate the laws of God or the rights of your fellow men, what would it be?" That is a hard question to answer. The truth of the matter is, you can have anything if you learn how to use the human computer that the good Lord has given us.

A book which has affected the lives of countless thousands is, *Success Through a Positive Mental Attitude* by Napoleon Hill and myself. I was born in poverty. I was very fortunate, even though my father passed away when I was quite young, because my mother sent me to a parochial school for a period of two years.

I started work at the age of six selling newspapers. I learned something. I learned how to sell and a six year old boy who needs money will get out and work. And to make a long story short, at age sixteen, I started selling insurance. At age twenty I formed my own agency. In 1937, I was given a book: *Think and Grow Rich*, which corresponded with my own philosophy, as I am sure that many of you will find when you read this type of literature. Because the philosophy corresponded with my own, I sent the book to all my sales representatives, office employees and staff. Suddenly, we found the key! People learned how to motivate themselves to achieve their goals. We found the vehicle whereby we could help a person who wanted help,to help himself using universal principles, which many of you are unconsciously using already. In 1952, I met Napoleon Hill for the first time. I endeavored to motivate him to get out of retirement. He started to work in 1908 under Andrew Carnegie, the great steelmaker, philoso-

pher, and philanthropist. He agreed on one condition, that I be his general manager. At the time, I was building up what some call an insurance empire, but I agreed. I had learned how to recognize, relate, assimilate and apply principles into my own life. Abraham Lincoln is reputed to have read less but thought more than any other man in public life. In his time, according to his biographer, he had developed the unique skill of recognizing a principle related to himself, then assimilating and applying it. I read a book many, many years ago, *The Magnificent Obsession* by Lloyd C. Douglas. The essence of the book is that if you do good for others, without expecting a return to yourself, in fact accepting no publicity, not bragging about it, accepting no compensation, you can't stop it, reward comes back ten thousand-fold. But it is the title of the book that impressed me: *The Magnificent Obsession.* In those days I would not have dared to tell what I am going to tell you now. I developed my own magnificent obsession. I made a vow that perhaps one day I could show my appreciation to my Creator for the blessings He bestowed upon me, not by merely saying prayers of thanks, but through action. I resolved that I would try to change this world and make it a better place for this and future generations. Can it be done? It is being done, on every continent of this world. And this afternoon, and tomorrow at workshops on motivation, those of you who are interested and have the opportunity to ask questions, can learn more about it.

Now, what does this mean to you? I will let you in on the secret: You are wasing your time. UNLESS YOU ARE READY! Unless you realize that you are an important person YOU ARE THE REFLECTION of divine power. You are the most important living person in your life. You have potential power which you may never use. But you have it! Why not learn how to use it? Whether I train teachers as I have for years, or whether I train disadvantaged youth in the Boys Clubs of America; whether I work with prisoners or with anyone else at any echelon of life, I find that everyone who is ready, if they have a positive mental attitude, can become rich and successful as an individual and as a contributing member of society.

What does this mean to you? It depends upon what action you take. You are in the greatest profession of all, helping and teaching those under your supervision. Be you teachers of teachers or teachers of children and youth, you not only affect their lives but countless of others as well. What's going to happen to you depends upon whether you develop a positive mental attitude and thereby unleash an unlimited store of energy and creativity.

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SECTION TWO:
Egyptian Education Today

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Recent Educational Reforms in Egypt

M. M. Radwan
Past President
Egyptian Teachers Syndicate
Cairo, Egypt

Introduction

During the last 29 years we have been able, in spite of our difficult conditions, to change our society from a feudal one, in which capital dominated and the measures of justice were unbalanced; a society where one-half percent of the population owned more than 90% of the wealth, to a democratic society, governed by constitutional institutions, where law prevails, opportunities abound, and every citizen enjoys social and political freedom. This fundamental change has reflected itself in the Egyptian educational system.

I do not claim that this society is perfect and complete. There is, however, a strong and inexorable progress toward these new societal goals.

Education Prior to the 1952 Revolution

Education offered by the State before the 1952 revolution was divided into two categories:

1. public education, starting with the primary stage, followed by the secondary one, and leading on to higher or university education (expensive—only the wealthy could afford this); and

2. free, four-year elementary education which, unfortunately, led nowhere.

These classifications meant that public education was intended for a special class, the class of those who could pay. The state was quite generous in financing and supporting this kind of education, providing it with modern buildings and equipment, as well as with properly-trained teachers. The curricula included the learning of foreign languages, a sign of aristocracy at the time Moreover, this type of education was open, leading to the posts of leadership in the community; engineers, doctors, lawyers, political leaders, and ministers. This simply meant that such posts were confined to a special class that consisted of a few thousand, leaving the millions deprived of any education. Even the few who could go to elementary schools had nowhere to go afterwards and relapsed into illiteracy a few years after they left school.

In addition to these two types of government schooling, there were foreign schools that were owned by religious missions or by foreign organizations. Their fees were even higher. There was also religious education at the institutes of Al-Azhar, yet the curricula were restricted to Islamic studies and the learning of the Arabic language.

The outcome of such a policy of education was:

1. the masses were deprived of educational opportunities, thus depriving the society of many potential workers and leaders who existed among them; and,
2. such different educational systems, with their diverse ideals, structures, curricula, and teaching methods, had an impact upon the community itself.

The Egyptian intellectuals were a strange mixture of persons with opposing ideas and conflicting values. This is a very important point, illustrated in a quote from the book, "The Philosophy of the Revolution", written by the late President Gamal Abdel-Nasser and published in 1953, just one year after the revolution. It is an ideal analysis of Egyptian society at the time, and the social and cultural contradictions that prevailed in it. Gamal Abdel-Nasser wrote:

> I sometimes consider the state of an average Egyptian family: the father is a turband fellah (peasant)—thoroughbred country fellow; the mother is a lady of Turkish descent; the sons attend schools following the English educational system; and the daughters attend schools following the French educational system.
>
> All this in an atmosphere in which the thirteenth century

spirit and twentieth century manifestations intermingle and interact . . . I see all this, . . . bewildering perplexity, which is torturing our minds, and this astounding confusion, which is destroying our very existence . . . I then say to myself: Surely, our society will crystallize, surely, it will be solidified, surely it will be welded into a strong, homogenous whole. All that is required, is to strain every nerve, to hold our ground, during this period of transition.

Education Following the 1952 Revolution

Several main principles governed our educational policy in the years following the 1952 revolution. First was the democratic right of every citizen to receive an education, regardless of wealth or social status. This principle was affirmed by our permanent constitution in 1971. The second principle was the achievement of unity through the abolishment of dualism in education, as well as through offering equal educational opportunities, based on abilities, capacities, and aptitudes; a form of unity in diversity.

Later, a third principle was put forth in order that education might fulfill its role in the preparation of the required human resource; to link up educational and training policies with development plans, and to provide the required labor power in quantity, in quality, and in time.

Education Today

In order to offer the masses their democratic right to educational opportunities, three goals were set: the unification of basic education; the offering of free education for all; and, the offering of equal opportunities for all, based on abilities and aptitudes.

Dualism in our educational system was abolished. The curricula were unified for all pupils from the ages of six to 15. Even the foreign and private schools were required to follow the official governmental curricula with the exception of the foreign language syllabus, which was left to their consideration. Diversification started at the secondary stage level, either general or technical.

Education was to be free throughout, including high and university education. It is taken for granted that free education means nothing if there are not sufficient spaces available to accommodate all compulsory school-aged children.

Egypt has elected to dedicate itself to mass education, rather than to the preparation of an educated elite. Although the national goals

may not have been achieved, a serious and concerted effort is being made to achieve universal, free, and compulsory education for the first six years of schooling, and to aim at expanding this education to nine years.

The number of primary state pupils jumped from 1¼ million children in 1952, to more than 4½ million last year. The Minister of Education recently said that nearly one million six-year-olds will be enrolled in the first grade this year, constituting some 88% of this age group. The Ministry of Education has set a five-year plan, ending in 1985, to reach 95% enrollment.

Of course, a parallel expansion has taken place in the upper stages of instruction; the preparatory school (junior high school, ages 12 to 15), and the secondary school, whether general or technical (ages 15 to 18).

Technical Education Planning and Expansion

As to the third basis on which our educational policy was founded, namely linking up educational and training policies with development plans, although scientific planning was introduced into our thinking and practice just after the 1952 revolution, the implementation of this idea has never been properly fulfilled. This was due basically to the absence of a long-term, comprehensive, scientific development plan. Without such a plan we cannot adequately define the quantity and quality of the supply and demand for human resources in the various professions and fields of specialization. Such a survey is most vital for the setting up of an efficient educational plan.

Nevertheless, attempts have been made here and there to make approximate estimates of the supply and demand for manpower, through some kind of indicators, based on observations and previous experiences. According to these estimates, it was apparent that secondary technical education should be expanded in quantity and improved in quality.

The school year 1978-79 marked a milestone for the technical education in Egypt, for it was the year in which more students were enrolled in technical secondary education than in general secondary education, 56% versus 44%. By 1984, we hope to increase that percentage to 65, enroute to an end goal of 70% of those with preparatory school certificates.

Our secondary technical schools, particularly the industrial schools, are overcrowded and under-equipped with outmoded, worn-out equipment. In the last two years, laudable attempts have been made to remedy the situation, particularly that of upgrading and

updating the training offered, creating more five-year programs and tying them directly into business and industry through mutual program development and the provision of at least 50% on-the-job experience. As the economy develops, provisions have been made for new manpower training programs in banking, law, insurance, tourism and other commercial areas.

The Ministry of Education has concluded agreements with the Ministries of Industry, Agriculture, Health, Housing, Justice, and Finance, that they establish specialized schools for which the Ministry of Education provides the necessary teachers in the cultural, scientific, and technical subjects. These kinds of joint schools have enabled students to experience the world of work, thereby better preparing them for integration into society at large. As for equipment, the World Bank, U.S.A.I.D., and other international organizations have given generous support for our technical schools.

The Search for Quality in Education

In facing the great demand of the masses for education, quantity was stressed at the expense of the quality of education given. Changing this emphasis was not an easy task and in spite of the appeals of educationists and intellectuals, many years passed before these appeals found response.

The new movement for a better quality of education has made considerable progress since the Ratification Revolution of 1971-77, led by President Sadat, which aimed at rebuilding the democatic structure, establishing democratic institutions, and restoring individual freedom. Several educational developments took place; in the curricula, in the preparation of teachers, in inservice training, in evaluation and examinations, and in other educational aspects.

But all this was insufficient and President Sadat called for "a revolution in education". A study was done by experts of the Ministry of Education, and the National Centre for Educational Research. A working paper on "the development of education in Egypt" was submitted by the Ministry to the public in September, 1979. A nationwide comprehensive discussion of the contents of this paper took place over ten months. Many institutions participated in the discussion, including the committee of education of the people's assembly, the political parties, the national council for education, scientific research and technology, the local government organs, the professional unions in general and the teachers syndicate in particular, and the universities, etc. Public opinion was expressed through the press and other mass media. The discussions continued for ten months, and a final report

was drafted and published in July, 1980, under the title, "Developing and Innovating Education in Egypt; its policy, plans, and programs of implementation". The draft was adopted by the National Democratic Party in its first assembly of delegates in September, 1980, and by the Cabinet later on. It was the source of the Educational Act passed by the Peoples Assembly in July, 1981.

Two major items of the act are of great significance. The first is extending compulsory education from six to nine years, namely, from the ages of six to 15. The second is the adoption of universal basic education, rather that universal primary education.

As for extending the compulsory school period, it was necessitated by the fact that a considerable percentage of our children were liable to relapse into illiteracy after ending the compulsory years. In a modern society like ours, six years of education is insufficient for developing the indispensable knowledge, skills, experiences, and attitudes needed for living. It is expected that during the coming years, the primary examination certificate will no longer be held, but will be replaced by an internal promotion exam from the sixth to the seventh grade. This will encourage students to complete their nine years of compulsory basic education.

What Is Basic Education

Basic education is defined by the Ministry of Education, in its documents, as a unified and sequential program of study for grades one through nine, designed for all the children of Egypt, boys and girls, in both rural and urban areas, aimed at providing them with the fundamentals of knowledge, skills, and attitudes suitable to the conditions of their environment, whether agricultural, industrial, or otherwise. Those who complete the basic education state should be ready and able to either enter the society, or to continue education at higher levels.

Although basic education is not designed to prepare students for a vocation, it is hoped that it will refocus education on practical studies, on prevocational activities, on relating theory to practice, and thought to action; all this as part of the total educational endeavor.

Basic education is functional education, as it is related to the life of the pupil and his real world. What is taught at school is intimately connected with what he faces in his external environment. The environment, including modes of production and wealth, is considered one of the main sources for school studies and research. Basic education extends beyond preparation in technical skills to include an awareness of work values and habits, critical and creative thinking skills,

and an awareness of means for continued education.

Basic education in its modern sense was tried in Egypt for the first time during the 1978/79 academic year and involved 223 primary schools (out of 10,273) and 56 preparatory schools (out of 1,782). The basic education philosophy will eventually be implemented in all primary and preparatory schools, from grade one through grade nine.

There has been some criticism of the more experimental programs, however, from both Egyptian and American experts who claim that practical studies have been introduced into the curriculum without adequate preparation for them, and that there is no apparent conceptual or substantive integration with the other subjects offered in the curriculum, especially with math and science and arts and crafts. The end results of instruction in the practical subjects are not clearly stated. Consequently, no appropriate facilities or teacher capabilities exist with regard to field work, "hands-on" experience, or training in this area.

However, two measures are being taken by the Ministry of Education at present. First, a plan for preparing teachers of basic education at two levels: at the teacher training institutes for teachers of the first four grades; and at the facilities of education, for teachers of the upper grades. Second, a group of experts are working on a review of the entire curriculum for basic education in light of the evaluation made during the last two years.

Thus, basic education will continue to crystallize under the guidance of experts to help prepare Egyptian children for their role in society.

Egyptian Education Today

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Two Systems of Education

There are two systems of education in Egypt, each having distinctive traits.

The El Azhar System, the oldest, dates back to the 13th century. This system deals mainly and in great depth with religious subjects; the study of the Koran, Islamic history and culture, and the Arabic

language. El Azhar has its own schools, institutes, colleges, and universities, enrolling about 2-3% of the total number of students.

The State system, a modern one which began at the turn of the century, takes after the European system (England and France in particular) and deals with modern sciences, humanities, languages, and other subjects taught everywhere in other countries of the world. This system comprises 16,000 schools and institutes, 12 universities and about eight million students, according to the 1981 census.

The Educational Ladder

The educational ladder in Egypt, as in most modern countries, consists of five stages, plus Kindergarten:

1. primary stage—ages 6-12;
2. preparatory school (junior, secondary)—ages 12-15;
3. secondary school (general, technical)—ages 15-18;
4. junior colleges, or technical institutes (between the secondary school and university level)—ages 18-21; and,
5. universities and institutes of higher education.

The total number of students enrolled in all schools and universities is about eight million out of a total population of 43 million. Of these eight million students, one million are in universities, and 80,000 of these students are foreign, mainly from Africa and Arab countries. One million students are in secondary schools and junior colleges, 1,750,000 students are in prep schools, and four and one-half million children are in primary compulsory education.

Five Main Features of Egyptian Education

There are five important characteristics of Egyptian schools worth noting. Education is free at all stages for natives, with the exception of kindergarten, private schools, foreign students, and foreign schools. There are a great number of foreign schools; American, English, French, German, etc., following their own systems of education, provided they do not interfere in either the politics or religion of the country. Equality of opportunity is guaranteed to all citizens, regardless of race, color, religion, or social status. Age, ability, and aptitude are the only means of differentiation. Girls have the same opportunities as boys. Primary, prep schools, and universities are all coeducational. Only secondary schools and the El Azhar Institutes are segregated. And finally, private education is open to private individuals. The private schools comprise ten percent (700,000) of the total number of students enrolled in pre-university general education. The fees for private schooling are high.

The Role of the Faculties of Education in Teacher Preparation

Teacher preparation is one of the outstanding issues which has preoccupied Egyptians in general and educators in particular as it is the greatest factor in the formulation of educational policies. Teacher preparation in Egypt is divided into two categories: elementary teacher training institutes, which come under the supervision of the Ministry of Education; and secondary school teacher training, which is overseen by the faculties of education of universities.

Prior to 1872, Egypt had no institutes for the preparation of teachers. In 1908 the National University was founded and many of its graduates worked as secondary school teachers without the benefit of any special training. In 1928, however, a study was conducted by foreign experts who attributed the deterioration of the secondary schools to the weakness of the teachers. They recommended the establishment of an institute of higher education to train university graduates for their roles as teachers. They also suggested inservice training for existing teachers to bring them up to date with new educational methods, also under the institute of higher education. In the 1950's, teacher training was done at the university through the school of education, simultaneously combining university study in the major field with education courses. However, as industry and technology progressed, a new need was developing, that of training teachers in technical as well as general education.

Currently, there are 28 faculties (or schools) of education in Egypt that prepare teachers in both academic and non-academic subjects, but there are still no faculties of technical education. As of 1980, graduates of secondary technical schools (in agriculture, commerce, and trade) have been allowed to enter the faculties of education to train as teachers. Out of these 28 faculties, however, only seven combine both academic and education studies. The remaining 21 depend on other specialized faculties for the academic preparation of their students.

All of the faculties of education are supervised by the educational and teacher preparation committee, whose members are the deans of the faculties of education of all the universities. This consultatory body is also linked to the universities' supreme council, and has been entrusted with the establishment of new faculties of education and new curriculum development.

Teacher preparation today is a four-year commitment. Students are admitted on the grounds of their grades, their secondary school

leaving certificates, and their interests and general health; the latter two being determined through an interview with faculty of education members. Students follow a comprehensive academic year, with a prescribed curriculum and an end-of-the-year examination. Class time ranges from 24-34 hours per week.

The faculties of education also play a predominant role in inservice training of non-specialized teachers for both refresher courses and new methodology. In addition to providing the most up-to-date teaching methods, the courses encourage the teachers to discuss their own problems and handicaps in the classroom.

There is also a very ambitious plan for training elementary school teachers, to be coordinated jointly by the Ministry of Education and the schools of education at the universities.

Non-Formal Education and the Problem of Illiteracy

With the adoption of non-formal education, Egypt seeks to expand the concept of learning into a life-long educational process. Education will be available to all citizens through an integrated, comprehensive educational system in which all individuals, especially literates, can find opportunities for self-improvement in both their personal and professional lives.

Adult literacy in particular, is one of the most important goals of non-formal education. As of the 1976 census, adult illiteracy, defined as the ignorance of reading, writing and arithmetic, had decreased to 47% in total; 39% among men, and 67% among women. Of these illiterates, the majority are young (15-35 years old). (A person is considered literate if he completes the fourth grade.) Of the four and one half million school-aged children in Egypt, two million receive no formal education of any kind. School enrollment capacity reached about 85% in 1978/79. This means that about 15% of primary school-aged children are not enrolled in school (130,000 children annually). Those children represent one of the basic sources of illiteracy in Egypt. The new Egyptian strategy aims to reach a 100% enrollment by 1985.

Of the children currently enrolled, 10% drop out by sixth grade, another percentage relapse into illiteracy because they do not continue their education past the primary level and are not exposed to follow-up activities after finishing their education. The idea of prolonging the period of obligatory education to nine years is one of the basic objectives of the new system of basic education that will be instated in 1981/82.

Direct efforts are also being made to combat illiteracy among adults. There are some 25,000 classes nationwide with an enrollment of one million adults in the academic year 1980/81, at a cost of two and a half million Egyptian pounds. There are also voluntary literacy efforts being carried out by the ruling party, the national societies, the armed forces, the police units, the factories, training divisions, the mass-communication media, the Ministries of Agriculture and Social Affairs, and other organizations. Literacy campaigns are a national responsibility that should be shouldered by all ministries, institutions, trade unions and intellectuals. This concept is the basis for a new legislation which includes:

1. programs of non-formal education for women;
2. setting up the links between formal and non-formal education;
3. suggestions for setting up a new supreme council for literacy and non-formal education at both the national and local levels; and
4. the use of the one-classroom school to accomodate children not enrolled in formal education systems, drop-outs, etc., generalizing this type of education with flexible curricula, methods, and timetables for all students, particularly in those rural areas.

Starting this year, adult education efforts will include not only literacy, but will extend to all types of non-formal education. Literacy will become but one aspect of adult education, a basic part of the total educational system inherant in the concept of life-long education. To realize that goal, we must work in a fully peaceful and democratic atmosphere, one that President Sadat sacrificed each moment of his life to provide.

Educational Technology: Its Application to Inservice Teacher Training in Egypt

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Basic Education: A New Approach

With the goal of abolishing once and for all the notion that vocational training is incompatible with general or theoretical education, Egypt has launched a major campaign to reconstruct its pre-university education system.

The new approach termed basic education, will see both a revised curriculum and a radical reorientation of classroom priorities during the first nine years of the Egyptian educational ladder. "It is not just a new name or a new title", says the Minister of Education and Scientific Research, Dr. Mostafa Kamal Helmy,"It's a completely new philosophy, a new entity, and for us it is a real breakthrough."

Basic education has already started experimentally in 450 schools throughout the country, and by the beginning of the new academic year in September, the concept will be the official policy of the Ministry.

Under the scheme the primary stage, which is now compulsory and extends from the age of six to 12 years, and the three-year preparatory stage, from the ages 12 to 15 years, will be merged. Eventually this nine-year combined phase will be compulsory. The minimum school-leaving age will therefore rise from 12 to 15 years.

The basic stage curriculum will concentrate on prevocational education and applied science, although strictly academic subjects will continue to be taught as well. From the age of nine, children will receive four to five hours a week of theoretical and practical training in four general craft areas: industry, agriculture, commerce, and home economics. Within these areas there are at least 90 specialties including woodwork, metal work, livestock raising, gardening, typing, child-care, and nutrition. The teaching of applied science begins at the age of ten and occupies four hours a week.

There is no doubt that the success or the failure of basic education depends to a great extent on the preparation of well-qualified teachers who are capable of doing their jobs within the conceptual framework of the basic education system before introducing it in schools. In other words, the preparation of the appropriate teacher should precede the generalization of the basic education system and not the reverse.

Before discussing the qualities and the characteristics of such a preparation, it is better to study the present status of basic education teachers and the methods applied for their preparation either in preservice or inservice training.

The Present Status of the Basic Education Teacher Preparation

The studies conducted regarding the present status of the preparation programs of teachers in both elementary and preparatory schools have revealed the following facts.

The preparation of the elementary school teacher is done at the present time in the teacher institutes. The graduates of these institutes lack knowledge about the new methods and trends of teaching which are based on students' activities and participation. They need intensive training in order to be able to apply these methods. It has been found that there is a shortage in the number of the teachers specialized in academic subjects. The percentage of the unqualified among them, either academically or educationally, ascends to 21% of the total number of teachers in elementary education which is 132,728 according to latest census.

The preparation of the preparatory school teacher is done at the present time in the university faculties of education. Such graduate teachers often apply the chalk-and-talk method. This is because, no sooner are they graduated than they forget the strategies taught them. The problem is, of course, that (as all educators know) teachers teach as they were taught and not as they were taught to teach.

It has been also found that there is another type of teacher who is

prepared neither in the teachers' institutes nor in the university faculties of education. These are taken from the graduates of other faculties such as faculties of arts, sciences, agriculture, commerce, etc. Such teachers have been appointed to preparatory schools without any educational professional preparation. The Ministry of Education usually conducts for them evening courses in the faculties of education to help them in their educational professions. This group of teachers reaches about 39% of the total number of the inservice teachers of the preparatory schools.

From the results of the previous studies it can be concluded that the teacher with this sort of preparation in Egypt is not able to function in his role as a teacher in the basic education system. For this reason the Ministry of Education is planning to develop the existing training programs. Such planning includes a long term plan. This plan is confined to the preparation of the required numbers of graduates from both the teachers' institutes and the faculties of education so as to meet the existing teacher shortage in basic education, which is also due to its expected extension.

This state of affairs requires a radical change in the programs of such institutes and faculties of education so that they can prepare effectively the basic education teacher. Some educators recommend that such commitment should be the responsibility of the university faculties of education only. They suggest the opening of new sections to receive students intending to become basic education teachers. Candidates in these sections should be chosen from among the graduates of both general and technical secondary schools. Technical secondary graduates should be given more concentrated theoretical courses, while general secondary graduates must have more technical courses. Nevertheless, the problem lies in the complaint that the faculties of education suffer from the limited resources which hinder them from carrying out such a commitment due to the shortage in the staff, buildings and equipment. A short-term plan aims at training thousands of the inservice teachers in elementary education who lack the appropriate qualifications. The Ministry of Education has estimated that in the long run not less than 130,000 teachers will be trained so that they may be able to do their teaching job effectively in the new educational system.

Priority for choice should go to two groups. The first group comprises 43,520 elementary school teachers who graduated from the teachers' institutes and studied five years after obtaining their preparatory school leaving certificate. The second group of 8,838, is chosen from the preparatory school teachers who graduated from the same

institutes but studied only two years after obtaining their secondary school leaving certificate. The Ministry of Education has asked the faculties of education to train a limited number, about 2,000 each year, from among school teachers, school headmasters, supervisors, and inspectors. This training program will start at the beginning of the academic year 1981/1982. It will include specialized studies in the subjects taught by those teachers. The major objective of these studies is to deepen the concepts and the skills related to the concept of basic education, its objectives, and its elements. Teachers will be trained to relate basic education to environmental problems and thus participate in solving them. The training program will concentrate on the practical and technical skills related to the four aforementioned craft areas. It is obvious that such a plan offers a big challenge. There are a lot of deterrents which would hinder it. The important ones are dealt with in the following section.

The Problem of Motivation

If it is easy to lead a horse to water, but it is difficult to force him to drink, it is equally easy to conduct inservice teacher training programs, but it is difficult to force teachers to learn something new or to master teaching skills unless they have the motivation to do so. The financial and moral status of the teachers will be a stumbling block in the way of developing their abilities and readiness to receive training unless a radical improvement in his financial status is made. It is therefore strongly urged that the development of a higher degree of professional competence is the surest road toward increased professional status and reward. It is probable that a large number of teachers, in the absence of motivation, would not attend the training sessions with enthusiasm lest they be deprived of the extra income they receive from private tutoring and from what is called "remedial courses" organized by their public schools.

The Problem of Financing

The problem of training and qualifying teachers is closely related to the problem of financing. As it was previously mentioned, the faculties of education complain of the shortage in their financial resources, staff, and facilities, due to the large number of students admitted under the existing programs. These faculties should receive more financial subsidies in order to conduct their training programs effectively.

The Problem of Attendance

The curriculum of study in the faculties of education requires that the students attend the faculty regularly. This system does not suit the inservice teachers. The Ministry of Education will not be able to release them from their duties. Their regular attendance during the week evenings is difficult for most of them, since they work in their school during the morning in the first term of the year, and, during the afternoon in the second term or vice-versa. This shifting system takes places in most schools. Moreover, the means of transportation from their schools to the faculties of education is very difficult or non-existant, especially in the remote areas.

The Problem of the Multi-training Areas

Most teachers in the elementary and preparatory stages have experience enough to transmit the knowledge to their students; but they need to be trained in other areas such as counseling, guidance, developing cognitive abilities, acquiring skills, and forming attitudes. They are in need of multi-training programs which cannot be offered save by a highly efficient national training center.

The Problem of Diversity of the Qualities of Teachers

The teachers who teach in basic education schools vary with respect to their professional and educational qualifications. There is a diversity of qualifications and types of teachers with different educational backgrounds, which make their training a very difficult task. A separate training session is needed for each homogeneous group of teachers.

The Problem of Irregular Teacher Attendance

An increasing number of movings among teachers during the academic year and a higher number of leaves of absence they attain due to sickness or delivery make the regularity of their attendance almost impossible.

Educational Technology for Resolving Problems

It is obvious that there is an urgent need to apply non-traditional techniques in training the inservice teachers. The required training program should be planned on scientific principles using the new

techniques of educational technology, especially in the field of training, in order to overcome the obstacles which hinder the effectiveness of existing training programs. In what follows, we present briefly some of the techniques applied in some countries, particularly developing ones, for their inservice teacher training programs.

Algeria began systematic inservice teacher education programs in 1962 both to upgrade teachers and to produce teachers to meet the post-independence emergency of lack of teachers. In the larger centers of population, inservice educational centers have been set up in existing school rooms to offer after-work courses. Teachers are taught by means of a fairly well integrated instructional technology that combines films, filmstrips, self-study manuals, and television lessons. Teachers in isolated areas, on the other hand, are instructed via correspondence study guides and radio.

In Nigeria, inservice teacher education took advantage of the television network established for schools.

The United Nations Relief Works Agency (UNRWA) combined correspondence study and direct instructions supported by audio visual aids and textual materials of various kinds in its inservice teacher education.

In the predominately metropolitan and densely populated Japan, (75% of the population is urban and there are 654.5 persons per square mile), inservice teacher education via correspondence instruction is combined with radio broadcasts. Japan's use of radio and correspondence for inservice teacher education is an arrangement deliberately designed to take advantage of the educational media that is already extensively developed and is used for various educational tasks such as high school education, business education, etc. Japan's example illustrates that there is an advantage to adopting an integrated approach to the planning and implementation of inservice teacher education. This can keep costs down.

Kenya's inservice teacher education is done through radio, correspondence, study guides, and face-to-face teaching. This also is true of India and Pakistan.

Colombia is using television to give teachers more educational training.

It is clear now that through the use of radio, correspondence instruction, programmed self-study manuals, study guides, and educational television programs, it is possible to improve the quality of the inservice teachers required for basic education and to fulfill an immediate need for well-trained and educated teachers in schools. It is also possible to train large numbers of teachers much faster than teacher

training institutes, faculties of education, and teacher training centers can do. Radio and correspondence in particular are helpful in accelerating or extending a program to teach isolated, rural teachers. The radio in particular is quick and inexpensive.

There is still the problem of the practical and professional training, especially in teaching skills, which cannot be done through the radio or the correspondence study nor conducted during the academic year since it is impossible for teachers to leave their schools to attend the training programs. The solution to this problem lies in the effective utilization of educational technology at the main training center or its branches. It is preferrable to conduct such training programs during the summer vacation, especially at the teacher training center in Alexandria. Following are some of the most effective techniques which would be applied for training inservice teachers in practical and teaching skills.

Workshops

Through workshops, teachers can make their own teaching aids and materials. This is an important aspect of training in developing countries where there are no ready-made and commercially-produced educational materials, as in the U.S.A. and other developed countries.

Microteaching with Overhead Projection of Observations

As the teachers take turns conducting microteaching episodes with pupils, the other trainees observe the teaching. They can at the same time watch on the wall as a skilled observer records on the overhead projector transparency observation blank the coding of teacher-pupil interaction. The observers are becoming trained to perceive more fully, and the data are used for a feedback discussion with the teacher immediately after the teaching session.

Programmed Videotapes/Slide Presentation

A self-instructional training package can be used to train inservice teachers in the use of effective questioning, discussion skills, and practical skills. The training resource package includes a set of programmed videotaped, audiotaped, or slide/tape instructional sequences in which questioning skills, discussion skills, and practical skills are demonstrated and explained. The serial task is broken down into contextual units, the option of unit length and work practice rate is determined by the trainee. This means that he/she is able to control his/her own learning pace. He/she could stop the videotape or the

slide tape presentation at any point to practice a previously presented sequence. During the practice he/she receives prompt feedback on the accuracy of his/her performance. This technique encourages self-diagnosis of questioning and discussion skills. In practical and manual skills, it increases the trainee's participation and provides immediate feedback or knowledge of results regarding accuracy of performance. Programmer manuals can be used and combined with the programmed videotapes or slide-tape presentations.

Conclusion

Educational technology affords a great potential for training inservice teachers for basic education. It provides an important strategy together with alternatives for meeting inservice teacher training problems. Through inservice teacher training and with the help of educational technology, it is possible to improve the quality of basic education teachers and supply an immediate need for well-trained and educated teachers in basic education schools.

Through educational technology, the large numbers of retrained basic education teachers can meet the changing curricula without disturbing the system.

With these proposals of initiating and determining inservice training programs, it is largely hoped that in putting them into practice, teachers can play an important role in the realization of the basic education objectives and in promoting the community education.

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SECTION THREE:
Linking Education to the Economy

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Linking Education to the Economy: An Introductory Statement

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Introduction

During the past 25 years in virtually every country of the world, most school systems have not kept up with the fact that students need new and different types of skills for successful employment. Many persons have viewed with alarm the lack of cooperation between education and the business world and this is as true in the U.S. as it is in many other countries of the world.

There are four basic questions or issues that need to be raised concerning the link that ought to exist between the school and the economy.

First, can curriculum at the secondary and post-secondary level be more sharply focused to prepare students for the world of work? In other words, do we have the right balance among academic subjects, skills development, and environment-oriented studies? Second, inadequate understanding and insufficient cooperation between the business community and academia seems to lead to a mutual suspicion. Very often, each blames the other for what are actually some of society's failures. Are there, therefore, positive steps that we can take to make this relationship more effective and productive in terms of the development and education of both youths and adults? Third, what can be done to build an educational system to ensure a higher quality and quantity of leaders, managers, and supervisors in our

society? And, fourth, how can people be best prepared to enter the mainstream of economic activity and overcome the economic bondage that has gripped a good part of the world. Babs Fafunwa, in his paper, "Linking Education to the Economy," is entirely correct when he writes, "The hiatus between school and the world of work in Africa is abysmal. We need to reexamine our curriculum at all levels to satisfy ourselves that they all relate to the world of work, which is employment." Sylvain Lourie, in his paper, "Redirecting Educational Priorities", points out that the university degree is a certificate of culture, and not necessarily a passport to employment. Further, he mentions the question concerning the economic bondage which we in education cannot evade. How can we prepare students to hold productive and lucrative jobs? Education embraces the development of the total person. Education, broadly defined, comprises all the processes by which a person develops abilities, attitudes, and forms of behavior, which contribute positive values to the society in which that individual lives.

A definition of education should include at least five elements. First is acquiring know-how and a useful field of knowledge. Second is motivation, instilling the desire to want to learn, to be able to motivate oneself and others. It has been my experience in organizations and business that no individual and no organization lacking motivation can really do great things. There is no spark, there is no verve, there is no vitality without some kind of motivation. Third is the development of character, values, and ethics, necesary in order to learn how to live and work together, both productivley and humanely. Fourth is wisdom and judgment, difficult to teach, perhaps only by example, as there is a great difference between smartness and wisdom. An in-depth study of leadership conducted several years ago among some 100 business leaders revealed an important common element, character is more important in shaping leadership than sheer intelligence.

Education and the World of Work

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A Historical Perspective

If some of the Egyptian pharaohs such as Kings Menes, Ramses or Khufu were to rise from their tombs, attend this meeting and read our program, particularly the title of my paper, their ancient majesties might be wondering whether we are their successors or their predecessors! In Khufu's time education was not divorced from the world of work. And according to John Brubacher, a noted educational historian, Plato in his *Republic* produced the "only notable philosophy of education" before the twentieth century. The ancient philosopher proposed an ideal society in which the citizens were divided into three classes: the philosphers, who governed the state; the warriors, who defended the state; and the farmers and craftsmen, who produced and distributed its material wealth. To implement these proposals, three different institutions were to be created for the selection and training of each class. Under the system everyone would be employed. Of course, Plato's theory could not hold then as there were no IQ, aptitude or attitude tests in his time!

In ancient times there was no dichotomy between education and the world of work. Education, broadly defined, comprises all efforts, conscious and direct, incidental and indirect, made by a given society to accomplish certain objectives that are considered desirable in terms of the individual's own needs as well as the needs of the society where the program is based. Education is also defined as the aggregate of all

the processes by means of which a person develops abilities, attitudes and forms of behavior of positive (and sometimes negative) value in the society in which he lives. Education is therefore more than mere schooling. It was the American author, Henry David Thoreau, who said that his education was interrupted by his schooling. In the 1960's, three eminent scholars attacked the school as an institution. They were Paul Goodman in *Compulsory Miseducation and the Community of Scholars*, John Holt in *How Children (and Schools) Fail* and Ivan Illich in *De-schooling Society*. These authors and many others criticized the over-institutionalization of the school system.

African Education Today

For generations our foreign experts on education in Africa argued that the content of primary syllabus or curriculum is such that all it can hope to achieve is a minimal education which does not equip the child for a specific skill or vocation and that it will be ridiculous to put children of 11 or 12 to work at such an early age. But this is a false assumption, for it has no basis in fact. In many parts of Africa today, that is to say south of the Sahara and north of the River Limpopo, the average African child does not attend school. Either his parents are too poor to pay or educational facilities are lacking or a combination of both. Even in countries where education is now free, e.g., Nigeria, Ghana, Kenya etc., at least 15% of school-age children are still not in school, either because the parents need the child for farm work or because the nearest school is too far from the child's home. Furthermore, children of nomadic parentage move from place to place with their parents. What then we may ask, are thousands, perhaps millions, of these non-school-going children doing?

If they are male, they help their parents with sowing and harvesting, cattle rearing, fishing, weaving, carpentry, etc. By the time they are, say, 12 to 14 years of age, they may be given their own small plots to farm or nets to fish. In the case of girls, they assist the parents with sowing and harvesting, trading, weaving, sewing, etc., as well as with general domestic duties in the household. In addition to this side of the child's education, there are social and cultural demands from the community that encourage early maturation. It is therefore ironic that those African children who go to school are called "too young to work", while their contemporaries who do not go to school are old enough to work!

Gap Between Education and Work

The hiatus between the school and the world of work in Africa is

abysmal. Even those who go to school and complete a cycle or two complain, as has been graphically illustrated by an African novelist Cameron Duodu, in his book titled, *The Gab Boys:*

> We respected nothing and nobody, and in turn no one respected us or cared two hoots about us. We had all 'finished' school and yet we had no work . . . If we had no work we thought, it was not because we were bad but because there were no jobs. Tell us to go back and work on our parents' farm—to 'go back to the land' as the politicians' cliche ran—and we would say: 'Look here, sir, if we wanted to be peasant farmers, we would not have wasted a full ten years at school learning to read and write . . . if we are to be farmers at all, we don't simply want to weed a piece of land and plant yam or plantain or cocoyam or cassava or vegetables on it in the topsy-turvy way we have seen our fathers do for years, but which barely gives them enough food to live on, let alone bring them money. No, sir.' Ask us: 'But do you know any better way of farming than your father's?' Our answer would still be a big No . . . Our teachers had no specialized training in agriculture. How could they teach us agriculture? They just gave us a plot to plant things on. And the things grew, thanks to the good soil. Any ass can do that.

To my mind, the above statement from an unemployed and unemployable school leaver symbolizes the dilemma faced not only by the young people in developing countries but also to some extent youths in developed countries as well. In the example cited, obviously ten years of "schooling" under the traditional system which most countries tend to cling on to almost religiously, has produced "misfits." In other words, development in the economic sector of our societies has outstripped development in the school sector. (The word "education in this context is avoided to distinguish it from mere "schooling"). It is obvious then that we in developing countries need to intensify our search for a better and more relevant system, because not only the volume of education, but also its very nature demands change to meet the challenge of a rapidly expanding economy, population and the attendant rising expectations of youth and adults alike. As Paul Legrand aptly observed:

> Whatever the speed and scale of achievement of traditional structure might be, schools, universities and institutions can no longer meet the strain . . . The work of education will

have to be pursued well beyond the school-leaving age to ensure the spread of knowledge and the type of training that individuals and societies will increasingly require. Such action can indeed only be envisaged through large-scale recourse, beyond the traditional functions of education, to all the vast modern media for spreading knowledge and providing training.

Systems of Learning

As we know, there are three major ways of acquiring knowledge or training:

1. through the formal "school"system—nursery, primary, secondary and post-secondary or higher education;
2. non-formal system—apprenticeship, on-the-job training (learning by doing); etc., and,
3. informal system—learning through a variety of experiences and exposures, otherwise known as incidental education.

Most developing countries have placed undue emphasis on formal education which in turn has resulted in the "craze" for paper qualification in terms of diplomas, certificates and university degrees of all types. Consequently, we have erroneously assumed that only those who go to school and receive paper qualifications are "educated" and those who do not go to school or who went and failed to receive paper qualifications are "not educated" nor are they intelligent enough to do the work of those with certificates.

Factors Affecting Education and Training Output

Training does not take place in a vacuum. It involves people, money, and material; however, there are six essential factors that can affect training output, positively or otherwise:

1. over-all objectives of the program;
2. quality of the program or curriculum;
3. quality of the students;
4. quality of the teachers and instructors;
5. quality of the equipment or facilities; and
6. management capacity (administrative, financial and physical).

Any of these factors can affect the quality of education for good or ill. We know that education is expected to be geared to the needs of the individual and the nation. Consequently, it should be "development oriented." However, we cannot use yesterday's tools for today's job and still expect to be in business tomorrow. Clinging to the traditional approach to education in most developing countries is like using yesterday's tools for today's job. As a result, we have a shortage of manpower on one hand and massive unemployment on the other.

We know there are three levels at which we educate and/or prepare our human resources for the world of work: primary level; post-primary or secondary level—secondary grammar, commercial, technical and agricultural; and post-secondary level—polytechnics, advanced teachers' colleges, various professional or sub-professional schools and universities. Less emphasized are: apprenticeships, e.g., road-side mechanics, craftshops, etc.; evening classes, private studies, correspondence coures; and, on-the-job training, learning by doing, etc.

We need to re-examine our curriculum and training programs at all levels—primary through post-secondary levels. We need to satisfy ourselves that each level is inter-related and that they all relate to the world of work which is employment, whether in the private or public sector.

We should jettison the idea that a man is "qualified" for a particular job or schedule of duty only if he possesses the "right" certificate. In Nigeria "failed" secondary school leavers employed in the private sector have over the past ten to 15 years become general managers, district or divisional managers of large oil companies and industrial concerns. These "failed" human resources rose to such levels through on-the-job training, short courses, seminars, a "learning by doing" system and by dint of hard work.

Bridging the Gap Between Education and the World of Work

We have so far highlighted some of the problems relating to the hiatus between education and the world of work. How do we bridge this appalling gap? I do not claim to have a bag of tricks; there is no sure-fire answer. However, there is considerable room for experimentation. Many government planners, educators, and even parents with the loudest complaints against the system are afraid of "trial and error" processes. But how can we find a solution if we are afraid to experiment with new approaches?

A number of countries are engaged in finding new ways of reorganizing the educational system to make it more responsive to the world of work.

Experiments in Selected Countries

In Bangladesh the government experimented with an outdoor primary education project involving one million children and 25,000 teachers. The aim was to relate the primary education program to the child's immediate environment and at the same time introduce him to the world of work. The outdoor school was operated for three months, while the remaining six months was spent inside the classroom.

In South Korea according to our ICET colleague, Dr. Yung Dug Lee, the government has streamlined its educational system by rationalizing and harmonizing the school curricula from primary level to the university level. The objective is to launch South Korea industrially and economically within a short span of time and also to develop new curricula that would reflect Korea's national ideals and needs, raise the achievement level of the children, and preserve Korean national values, particularly at the primary and secondary school stages.

In Nigeria the government held a national conference on curriculum reform in 1969 to rationalize the curriculum from primary to university level with a view to making it more functional in terms of the individual and the nation. Due to changes in government, the program is very slowly being implemented. Part of the implementation has resulted in free universal primary education, secondary, and university education based on the 6-3-3-4 system. From 1982, every child is expected to learn some skills while at primary and secondary school levels, e.g., carpentry, plumbing, brick-laying, weaving, etc.

Meanwhile, the Institute of Education at the University of Ife embarked on a project called "the use of Mother-tongue as medium of instruction at primary school level." Under this scheme, children learn science, mathematics, geography, history, agriculture, home economics, civics, sanitation, etc. in Yoruba, their mother-tongue, throughout the six years of primary education and are taught English as a second language. This experiment has proved very encouraging and has tended to confirm that a child learns best in his mother tongue.

In West Germany a life-long learning program was institutionalized by the establishment of comprehensive universities called "Gesamthochschulen." Wrote Dr. J. Fischer, Secretary-General of the West German Rectors' Conference:

- With their predilection for organization, the Germans could not but be tempted to try to put some order into this irrational outcome of history, seeking with or without the adoption of common admission requirements, to open doors in the walls separating institutions, or even better, draw them all together within a common framework;
- By means of a reform, to co-ordinate or integrate related courses of study in different institutions, thus making it possible for everyone to pursue his studies up to a level corresponding to his interests and abilities;
- To temper or correct the uncontrolled growth of institutions in their federal setting by regrouping them physically and by co-ordinating curricula in a manner consonant with the needs of a modern industrial state;
- No longer to reserve exclusively for universities the concept of teaching and learning based on research—a generally recognized principle in modern education;
- To replace the universality of the wider range of teaching in each individual university by the universality of the wider range of teaching which can be offered by a group of integrated institutions;
- To bridge the gap separating the literary and the scientific and technological "cultures" within the framework of an "inner" Gesamthochschule;
- To replace the multiplicity of administrative structures by creating large unified and self-governing bodies.

These are the hopes which are placed in the development of Gesamthochschulen. While the European debate seeks an answer to the increased demands for higher education, and to the consequent threat to the university, in the diversification of post-secondary institutions, the German plans seek to integrate the diversified institutions into a Gesamthochschule which is envisaged not as the beginning but as the culmination of all reforms.

In the United States, non-campus colleges and courses are not new but they are growing in emphasis and importance. Chapman College's "World Campus Afloat" offers undergraduate courses on a ship that travels around the globe with field trips in every port. ICET Board of Trustees member C. Y. Tung has launched Seawise University for the same purpose. A number of American unviersities, e.g., University of Colorado, University of Pittsburgh, Antioch, Kalamazoo

and others have "Junior Year Abroad" programs which enable their students to spend one year in an African university. The Open University in Britain and the University of the Air in the United States enable thousands of adults to listen to radio and television lectures supplemented by correspondence work.

In terms of curricular structures, examples abound in areas of innovation and experiments: intensive courses, trimesters, summer and winter terms and plain "time-tabling" as a means of planning curriculum for an individual student or group.

Imaginative Classes in U.S.

Steve Harvey, writing in the Lansing State Journal, (March 18, 1972), described a number of innovative classes, courses, locations and teaching modes:

> Adelphi University's most unusual class begins about 6 a.m. on weekdays. Soon after the professor greets the students, the classroom starts to shake for most of the hour—which is understandable, for the classroom is travelling at nearly 50 m.p.h.
>
> It is in a specially equipped commuter car of the Long Island Railroad, where passengers on their way to work take courses in business administration offered by the small Garden City College.
>
> Classes also are held on the return trip. By attending four one-hour periods per week, a student can earn a master's degree in two years, barring a rail strike.
>
> The program, which will soon offer a bachelor's degree as well, reflects the kind of inventive measures being taken by universities to increase their appeal to students as well as their value to the community.
>
> - At Mankato State in Minnesota, students—and townsfolk—sign up for such imaginative subjects as winemaking, gunsmithing and preventive maintenance, diagnosis and tuneup of Volkswagens and Porches.
> - In Survival 495 at the University of Hawaii, students are required to get to class by some means other than by automobile. If they drive there, they flunk the course.
> - Of all the courses, the problems of Adelphi University's classroom on wheels are probably unique.
>
> 'We had a rail strike that lasted about a month not too long ago,' shudders Julius Liff, Dean of the Business School.

'Fortunately, our semester was almost over and the students agreed to come in for a few Saturdays.'
Overall, school officials rated the program a success. At last count, more than 70 students—many of them businessmen and executives—were taking courses on three different rail lines. Tuition is $130.00 per credit. Rail fare is extra.

The Empire State College Program in New York State is another example of experimental learning and non-traditional education. The Empire State College, part of the State University of New York (SUNY), is established as a state-wide institution with a network of Regional Learning Centers: Albany, Manhattan, Old Westbury and Rochester. Its administrative and business office, called a coordinating center, is an old building located at Saratoga Springs. The coordinating center houses the learning resources, faculty and reference library, deans and administrative staff. Each of the four learning centers mentioned above is responsible for developing and teaching educational services and resources within its region. It is a university without walls. Over 1,400 students are enrolled on full and half-time basis and their ages range from 17 to 73. Students enroll and study all year round. Since instruction is individualized and tailored to the student's own choice, admissions criteria are:

1. ability of the college to meet an applicant's expressed educational objectives;
2. indication on the part of the student that he or she has a firm understanding of the college's educational procedures and recognizes its strong emphasis on independent study; and
3. possession of a high school diploma, its equivalent, or the ability to do college work as demonstrated by past experience.

The college staff include full-time faculty or mentors, as they are called, part-time adjunct or community faculty members, tutors, field-supervisors, and non-teaching professionals, who work directly with students or with the development of learning resources for students. All full-time staff are on a 12-month contract year.

Areas of study focus on the broad range of opportunities in the liberal arts and sciences, and specialized and/or interdisciplinary and cross cultural areas: business and labor studies, certain allied health programs, community services, and education.

Modes of learning are also varied: independent study, field experiences, on-the-job training, organized learning programs, seminars, classrooms, tutorials, or combinations of these.

Students and their mentors tailor educational programs to the needs, goals, and capacities of each student. Appropriate resources are utilized as they are suited to the student's approved educational objectives. These study plans, or learning contracts between the student and the mentor, and their evaluations, then constitute a program of study. The documents are shared with the home learning center or SUNY campus. Work is evaluated by learning center faculty and coordinating center staff. Successful students are recommended to the SUNY Board of Trustees, as in other SUNY units.

Units of credit at the college are described in terms of months of study. Students are required to spend 36 months, or its equivalent, of full-time study (36-40 hours per week) for a bachelor's degree; and 18 months or its equivalent of full time study for an associate degree.

Education and the World of Work

I have cited a few examples of what is happening in a number of countries around the world. I am sure that there are many more experiments and projects elsewhere on education and the world of work. The developed countries are concentrating their efforts more on post-secondary education. But we in the third world should place our own emphasis on primary and secondry levels of education at least for economic reasons. I have shown that children who do not go to school in developing countries enter the world of work before they are 12 years old. The question is, therefore, why can't we introduce the world of work to children who go to school as well? I believe we can, if our various countries are prepared to experiment and not be afraid of failure.

Even in some developed countries, e.g., U.S.A., many children are becoming bored at the secondary school level and are dropping in or dropping out of class. These children prefer non-academic courses, that is, technical or commercial courses, or handcrafts.

Educators all over the world seem to have placed undue emphasis on "academic work" and less on "technical or commercial" studies, even though our world has become more technologically oriented. John Gardner has aptly warned, "A nation that scorns at excellence in plumbing because it is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will neither have good plumbing nor good philosophy. And neither its pipes nor its theory will hold water."

Yet we cannot all be philosophers, theoreticians or theologians. Some people have to be educated carpenters, farmers, sailors,

weavers, fishermen or fisherwomen, traders and the like. Why then, we may ask, do we insist on making every school leaver a miniature "academic"at the age of 15 or even 11? Why should a student who is a natural artist or musician be compelled to pass secondary school physics and mathematics before he can be admitted to an art or music course at the university or college level? Why not devise mathematics for carpenters and plumbers to meet the requirements of the trade instead of making plumbers and carpenters learn physics and higher mathematics designed for physicists, computer scientists, etc? Our inability to devise such courses has always resulted in failing the affected students even before they enter college. In my view, this is the challenge which confronts educators the world over, particularly educators from developing countries. We should place academic and technical courses on the same pedestal—one is just as essential as the other in the world of work. I dream of the day when those children who are not technically able will be streamed into academic classes; it is always the other way at present!

Some Proposed Solutions

As I said earlier, children who are not attending school in developing countries are engaged in useful occupations. In my part of the world, parents in rural areas withdraw their children during planting and harvesting periods to help them on the farm. Why can't these children attending school be taught useful skills? Does school education promote lazines or poor attitude toward work? I contend that schooling does not promote laziness, but educators do! Experience in dealing with young children shows that children like to be active. They want to get involved in many activities, whether turning screws, manipulating gadgets, examining machines, cooking something, pushing or lifting objects, planting and harvesting, etc. I believe that we can reorganize the curriculum to capitalize on these interests. I therefore propose as follows:

I. Organize a conference of local educators, parents, employers, youth organizations, farmers, carpenters and other tradesmen and women, government officials, businessmen and women and request them to recommend a primary education course with a better surrender value, and a secondary school curriculum that will be more beneficial to the individual and the state. It is my belief that such a conference will yield better results than a conference of expert educators or economists. It is after such a grass-roots conference of "producers" and "consumers" that experts will be called upon to design a system that will reflect the yearnings of the people.

II. It may well be that such a conference may recommend a sandwich program for elementary and secondary school education as follows:

A. Elementary Stage

This is the most formative stage in a child's formal education. Attitudes and prejudices are developed between the ages of 0 to 12. If we want children to have healthy attitudes toward the world of work or to the dignity of labor we must devise an appropriate curriculum that emphasizes this and train teachers effectively to handle both the physical and the psychological needs of the children they teach. Once the foundation is laid at the primary level, we can build on this foundation at the secondary and post-secondary levels. I therefore submit the following proposals for scrutiny and criticism in the hope that a workable plan will eventually emerge:

1. First Three Years

Children are to be taught the three R's or in modern parlance, literacy, numeracy, and communication skills exclusively in their mother tongue with English or French as a second language for those in the anglophone and francophone countries, respectively. The curriculum should be so designed as to reflect the environment of the school and the children.

2. The Last Three Years

The fourth year should be divided between the classroom and the outdoors.

The fifth year should be spent completely out of the classroom with activities centered around the home and the community. Emphasis should be placed on home activities with parents' participation and on the community with activities such as farming, crafts, markets, carpentry, plumbing, bricklaying, fishing, etc. as appropriate.

The sixth year should be spent in the classroom putting ideas together and rounding up the program. All along, from year one to year six the four basic skills will be emphasized and reinforced: literacy, numeracy, communication skills, environmental studies and skills plus a second language, as necessary.

In assessing the children, it should be helpful to ask the parents to rate their children over a period of time in terms of home activities.

B. Secondary Education Level

The first three years of a six-year secondary education may be devoted to further mastery of the basics learned in primary school, that is, language arts, mathematical processes, literature, science and social and cultural studies, plus a specific skill as identified by aptitude tests and as confirmed by the pupil's expressed wishes. At the

end of this period (as it is presently planned in Nigeria), the child may go out to seek employment or go on to the last three years to complete his secondary school education.

In the words of an ancient philosopher, "The only way you can become a shoe-maker is to learn shoe-making." A woman's ability to quote Cicero in the original Latin will not be of much help to her in sewing a dress or changing a flat tire. She has to be taught.

In the final analysis, we must of necessity plan for life-long education for the young and the old since work is life-long and skills continue to change with the changing times. Consequently, there should be a comprehensive scheme for evening classes and schools for young and older adults who may wish to change their vocations from farming or plumbing, to law, medicine, engineering, teaching or philosophy; or indeed they may just wish to up-date their knowledge in their respective fields to meet the demands of their profession or trade.

Educators, planners and the students themselves must move or be forced to move by the very momentum of change.

Education for Employment in Uganda

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Today, most developing countries seem to place a great emphasis on formal education, yet they want an education which will not alienate youth from returning to the farm to assist their parents and make their country productive. It is very difficult, for instance, for a child who has had an academic education, to go back and soil his hands. In the 1960's, a Uganda minister of education declared to students that he would expect them to get degrees, obtain qualifications, and then please go back to the land, to help their parents develop the country. One student stood up and said, "But sir, why don't you also educate your children in Uganda? Why do you send your children to Britain where they sit in beautiful classrooms with air-conditioning, after graduation they come straight to office jobs and not to the land." The poor minister was embarrassed.

The developing countries have clung too long to the traditional approach to education. The education that was left in place by the colonial masters has not changed at all. If there has been any innovation in education in the developing countries, it has been almost negligible. This emphasis on formal education has resulted in a shortage of workers. People are not willing to take blue collar jobs. They are looking for white collar jobs which in most cases do not exist. There are few industries and factories to employ these people at the white collar level. As you may all be aware, in Uganda we have just finished a war of liberation following eight years of a regime of

murder and terror. The economy was totally destroyed and the official system completely collapsed. The result has been unemployment. People took to the streets for eight years, education forgotten. They were more interested in what we call "magendo" meaning "business". Everybody wanted to get rich. Education was not necessary at all. One did not need a degree in order to be a millionaire through hustling. This was the order of day for the last eight years under Amin.

When we took over Uganda in 1979, there were many children from the ages of 11 to 19 who had no jobs, children who were just running the streets. In order to rehabilitate these children, we have devised an educational system geared towards the world of work. With the help of well-wishers from the United States and the United Kingdom, we have created vast centers in the countrysides where thousands of children are being trained for the business world. We are not stressing literacy, but training for food production. For the moment, food is much more important than academic knowledge. The training lasts nine months, after which the children are absorbed into the agricultural system of the country. The government has also set up a committee to review the syllabus of the whole primary through secondary school system. The objectives are to streamline the education system, which collapsed during the nine years from 1971 to 1979. Emphasis will be placed on the teaching of practical skills again. A technical primary teachers college has been opened to train teachers to educate children in the practical skills that are useful and meaningful to the country.

Linking Education to Community Development and Employment in Czechoslovakia

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Introduction

The Czechoslovak Socialist Republic has a broadly developed system of education. Youth and adults are educated and trained for all branches of the national economy and culture. This has always had a favorable impact on the socio-political, economic, and cultural development of the society and has led to a rise in the cultural level of the people. Nevertheless, in the need for the overall development of the socialist society, the further strengthening of its economy, the deepening integration within the community of socialist countries, the development of science and technology, and the influence of world developments all influence the demands placed on the development of the educational system.

The implementation of such demanding tasks naturally requires the development of the scope and content of the subject matter taught in the schools. It requires the significant strengthening of the general educational and polytechnical components of the subject matter; it requires that secondary school leavers and graduates of institutions of higher eduation should have broader qualifications to enable them to adapt quickly to the changing conditions of production and social

activity. By its content and organization, the educational system is ever more closely linked with the life and work of the people and is oriented to demonstrate a flexible and timely response to the newly-arising needs of everyday life.

Further development of the Czechoslovak educational system is carried out on the basis of the project adopted by the supreme political and state bodies of Czechoslovakia. This project, adopted in 1976, has become the long-term program of the development of the educational system in Czechoslovakia and is aimed mainly at further deepening the democratic character of education. In it are projected the idealogical, political, democratic, cultural, and pedagogical goals of education.

A New System Of Education

This new educational system is being developed according to the following criteria.

1. One of the principles of the construction of an advanced socialist society is to provide all of its members with an equal opportunity for social involvement and for self-realization based on individual abilities and interests. In the sphere of education this means offering to all the opportunity to attain a certain level of education corresponding to the needs of current and future society.
2. Education is becoming a genuinely societal matter and the process of its implementation is a systematic, life-long process of the cultivation of man.
3. We are concerned that within the educational process the individual be provided with a reliable orientation for acquiring all that will be decisive for his style of life and work, to teach him to independently complete his knowledge, to learn to find his orientation in the rapid flow of technical, scientific, political, economic and other information.
4. The growth of material possibilities requires that it be accompanied by the adequate growth in the ideological, moral, and cultural level of each individual.

The further development of education must integrate the new developments in science and technology in practice, the enforcement

of changes in the content and character of social work, and the socialization of the way of life. The said goal may be reached by the democratization of education, the fulfillment of the socio-political demand that education should meet both the demands of all members of society and that it should enable the individual to understand his role in society and enable him to develop his own personality. Emphasis is placed on providing a harmonious environment for social involvement. The aim is to see the wholistic development of all children, to see to it that those who are lagging behind should catch up with the others, that general development should take place in all children such as will create the conditions for the selection and development of talents of various orientations, not only in science and art but also in manual work, organizational, managerial, and other work. All children should grow up with a correct social awareness, not in the concept of social elites, but as aware and diligent citizens of the socialist state. The aim is to change the democracy of the access to education to the democracy of the successful completion of the educational level which corresponds to the current and prospective demands of the socialist society.

Democratizing Education

We view the deepening of democratization mainly:

1. as safeguarding organized pre-school education for all children of pre-school age without pushing family education into the background;
2. on the development of the content and methods of educational work in basic school such as would provide the basis for the acquisition of the working and life style of the future members of the socialist society, including the removal of differences between education in the towns and villages;
3. as the development of special care for children and youth with physical, mental, and sensory handicaps within installations integrated into the educational system;
4. as providing complete secondary school education to the majority and finally to the whole young generation;
5. as the gradual development of a system of life-long education for all members of society; and,

6. as creating situations where education becomes the focus not only of interest but also of the direct participation of all sections of society.

The educational system, by its content and organization, must be directly linked with the life and work of the people. It must be flexible and respond to their newly arising needs, including personal involvement in the building up of society. The content of education therefore represents a unity of education, rearing, and the active participation of pupils in creative work. It proceeds from the unity of their learning, productive, social, art, and sport activities. The necessity of giving priority to the solution of the content of education proceeds both from experience gained in the Czechoslovak Socialist Republic and in the other socialist countries. This experience has proved that changes in the organizational structure, despite having played an important role in the process of the democratization of education, cannot in themselves influence the quality of the functioning of the educational system. The final result of the reconstruction of educational systems is decided by the solution of content structures comprising first of all:

1. the educational content of the system as a whole;

2. methods involved in the teaching process, in educational activities and in the productive work of pupils in practical work.

New Educational Content

The development of content proceeds from the analysis of the function of education in the life of the individual and of society, not merely from the demands of the representatives of the individual science disciplines. New content is based on man's involvement in the life of the socialist society.

From the purely pedagogical point of view, we are concerned with creating such conditions as would allow the pupil in the process of learning to become involved in social reality, to take an active attitude towards it thereby acting on its transformation and on the transformation of his own self.

New Teaching Methods

Teaching methods and forms of organization also undergo significant changes. Educational methods should not be aimed merely at the

provision of knowledge but also at the development of the ability to seek new knowledge, experience and at the development of self-education. This means that great emphasis is placed on the implementation of the independent work of pupils.

The development of activity teaching methods is enhanced by the creation of an adequate stock of modern educational media and teaching aids. Intention to develop active teaching methods and to activate the whole teaching process is given by the level of the theoretical elaboration of these problems in current Marx-Leninist pedagogy.

Group teaching is conceived as being only one of the possible forms of organization whose application depends especially on the inner conditions of work with the pupils. We are concerned with mass, group, and individual teaching methods. Emphasis is placed on educational activities in the school and out of school, in the Youth Pioneer Organization, the Socialist Union of Youth, pupils committees, hobby groups, publicly beneficial work, various forms of practical teaching, specialized training, enlightment activities, etc.

Structure of the Czech System

The structure of the Czechoslovak educational system reflects the societal need for life-long education. The State directs education through the school. The effect of education outside of the school be it in organizations, the mass media, public organizations etc., is unambiguously conditioned by the central educational work of the school.

In this situation the relationship between the school and out-of-school educational activities is manifest in the new concept of the institutional arrangement of education. The Czechoslovak educational system is conceived as a comprehensive system of educational in-school and out-of-school institutions.

The determining characteristic of the structural arrangement of the educational system is its unity, openness and prospectiveness.

Structural Unity

All levels, elements, and components of the Czechoslovak educational system form a unified entity with a purposeful division of educational tasks.

The core of the system is the 12-year cycle for youth between the ages of six and 18, providing complete secondary school education, divided into basic school with two, four-year levels and secondary schools streamed into grammar schools, secondary technical schools

and secondary vocational schools. The basic 12-year cycle of education follows pre-school education. It covers gradually the whole population of children, (in 1980, 85% of all children of this age group, in 1985, 88-90% of all pre-school age children.).

The 12-year cycle of complete secondary school education divided into 4+4+4 years has made it possible to evenly distribute the first and second levels of basic school and the secondary school. The choice of such a structure was made among others in view of the shift of the focus of the democratization of education to the middle link in the structure with the requirement that complete secondary school education be safeguarded for all young people to age 14.

The structure of the system is culminated in the vertical direction by higher education whose mission is to prepare highly qualified specialists and scientific workers for all spheres of social life. The possibility of higher education is being opened to all who have attained the level of complete secondary school education in any stream. The fulfillment of this possibility, in compliance with the measure of social need for specialists with higher education qualifications, is being provided to an increasing extent to those who, in admission procedures, show the best political, specialist, and character qualities required for successful study.

The life-long care of the further development of man's personality in a socialist society is the task and aim of the content and forms of broad and versatile adult education.

The unity of the educational system is completed by further elements whose task is the education of children with specific qualities, talents, and interests. These are mainly installations for children with various handicaps as well as schools caring for the development of interests and talents, such as people's schools of art, language schools, etc. After-school facilities and schoolclubs, houses of young pioneers and youth, stations of young technicians, nature conservationists and tourists, are fully at the disposal of children and youth in their leisure time.

Structural Openness

The openness of the system is manifest in the fact that school-leavers can continue their education out of school to gain further skills. The system does not have blind alleys but rather provides the possibility for all to reach, by different paths, the highest levels of education.

The new concept removes status differences between graduates of

general secondary schools and technical secondary schools. This means that the attained levels of education in streams of the secondary school are socially equal.

Complete secondary school education can be achieved by means of four-year comprehensive courses, grammar schools and technical secondary schools, study and courses followed by two to three-year apprenticeships. The preservation of the two to three year apprenticeships at the level of middle education is important for the working class which is still largely made up of medium and less-skilled workers. The expected transition of the number of such workers to the level of highly-skilled workers is being achieved by study courses set up at the established secondary vocational schools which open the doors to complete secondary school education for young workers. The graduates of these study courses not only represent a reserve of qualified personnel for the future, but also a significant component in the development of the general educational level of the working class and of society in general.

Structural Flexibility

Finally, the third dimension of the structural arrangement of the current system is its flexibility. This characteristic permits the further quantitative development of education in Czechoslovakia. The flexibility of the system stems from the structure of the middle link, namely, the educational institutions for the training of working-class youth at secondary vocational schools. This type of secondary school comprises various forms of preparation for skilled occupations, the general education, and polytechnical component as well as the technical/vocational/component, both theoretical and practical. It has the flexibility to respond quickly to changes in social demand, especially the need for various forms of further education.

Conclusion

The Czechoslovak educational system is moving rapidly toward the democratization of education, the linking of school with life, and the unifying of rearing and education.

Only an educational system which is directly linked with life fulfills its social function. This goal can be reached if a system is flexible, responds to social needs and reflects the development of the scientific potential in the content, methods, forms and media of its educational activities.

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SECTION FOUR: Redirecting Educational Priorities

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Redirecting Education Priorities

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Education as a Source of Conflict

In today's world few countries can claim, and prove, that education is not a source of conflict; either as a problem to be solved or a solution to be "devoutly wished".

For most societies, certainly in the industrialized world, known in the West's new vocabulary as the "North", education, being an end itself, must be made to grow and to expand. This is so because both by conviction (education, in the long run is the harbinger of change) and by inertia (educational systems invite, in their linear growth, constant demand for the "next step") education is a living structure devouring resources and attempting to satisfy ambitions. This never-ending hunger on the demand side indeed poses an impressive problem given prevailing resource limitations and structural rigidities.

For other societies, not necessarily confined to the so-called "South", education looms as the solution to all evils; underdevelopment, unemployment, violence and civic unrest, deterioration of the environment, the unchecked and undirected expansion and growth of science and technology, and many more of today's ills.

While this faith placed in education is at times highly unjustified, as education alone "can't do it all", it is easily understood when facing the figures of the developing countries. Just as a sample, let us recall that some 40% of Africa's school-age children are not enrolled in any formal systems, the equivalent rough estimates for Asia and Arab States is 20% and somewhat less in Latin America: in total, over 130 million boys and girls between the ages of seven and 12 are con-

demned to become illiterate adults.

Illiteracy figures are a spectacular 70% in Africa, 60% in Asia and some 20% in Latin America. A total of 840 million adults are thus left outside the main currents of change.

Can one wonder that this "clientele" of at least one billion persons seeks a way out through some educational services that could be offered them?

Limitations of Formal Education

But, education, as a formal, structured system, cannot alone do it. Why? First, because we know and the Jenks report, now almost ten years old, has made it abundantly clear at least for the United States, that schooling cannot alone erase or even significantly reduce inequalities. In his own words, "None of the evidence we have reviewed suggests that the school reform can be expected to bring about significant social changes outside the schools."

Second, the internal mores of the educational establishment do not respond to the challenge thrust upon them by youth and parents anxious to face tomorrow's and today's world and little preoccuppied with yesterday's values, which too often sustain the contents, methods and structures of existing school systems.

Third, there are relatively limited financial and real resources which most societies feel they can mobilize in favor of education.

Forced, then, with a problem which generates problems each time a solution is expected, we can readily argue that "more of the same" just will not do. Indeed, we need to address ourselves to "redirecting priorities" as we have conceived them up until now.

What are these day-to-day issues all of you face as heads of training of research institutions, as administrators or as policy makers? In a broad view we could oversimplify the situation thus:

Literacy

In developing countries, literacy is by far the most burning issue that needs to be faced and resolved—*fast*! Primary education is not generalized in most rural areas and children from these areas and from shanty towns around large cities are left to fend for themselves, under the best of circumstances, in the non-formal sector of the economy. Secondary education is for the urban middle class, often in the hands of the private sector and generally oriented towards university entrance. Universities are made unwieldy by the number of their students; unattractive by the part-time role of most professors, and sterile by the absence of research facilities. They hardly qualify as

centers of excellence which, among other responsibilities, should help the whole of the educational system to respond to the demands of society and economic production.

In Western industrialized nations, the myth of higher education, hardly questioned in the post-war years, is being eroded and now, in the pervading unemployment era, is being openly challenged. A university degree is simply a certificate of cultural achievement; it is not a guarantee—not even a vague promise—of employment. Need we dwell on the state and conditions of secondary schools where unrest, tension and even strife breed and spread their effects on the rest of society? Even primary schools act as weeding instruments, eliminating children from rural areas and linguistic groups distinct from the official vernacular.

Faced with such a situation, can we define these new priorities? Once sketchily defined, we shall get to the instrumental question: How do we go about tackling new challenges? Let us be clear; most problems touching on the educational phenomenon revolve around one central issue; can education be made available to all who need and want its services? In UNESCO very little is more important than the achievement of a positive answer to this question. I speak here of the right to education. This right, sacred among all as far as my organization is concerned, is ensured wherever education has been effectively democratized. For us, the road has been drawn by the resolutions which guide our work and the commitments of non-governmental organizations such as yours. The democratization of education must be not only a moral requirement and condition for the full development of all human beings, but an imperative condition for social progress and economic growth. Democratization means essentially that the lines of communication between producers and consumers of educational goods must be the shortest. Consumers must be involved in the definition of the product they need and must play a direct role in its distribution. In non-economic terms, this means that the learner, no matter his age, his societal role, place of living or of work must be involved in the design and transmission of the education he has a demand for.

Educational Priorities

Concretely then, what are the priorities to be altered if we are to resolve the two most glaring issues: youth and adult illiteracy and incomplete general or basic education for all children. Incidentally, the solutions for them are the key objectives of UNESCO's Major Project in Latin America and the Carribean.

Illiteracy

Unfortunately, many countries suffering from the highest rates of illiteracy allot little for education out of their national budget. In this field private initiatives, though far from being absent are, generally, marginal in quantitative terms; plus all initiatives rest on the public sector as it is reflected in total governmental expenditures. Within those limited amounts, these authorities tend to assign an increasingly smaller fraction for primary education and mass literacy programs. Four steps appear necessary:

1. For some countries nothing short of new budgetary priorities will help resolve this issue: more resources should be directed at literacy and primary and general basic education while the growth of expenditures for higher education should be slowed down.
2. Costs should be reduced by calling on volunteers (urban students, for example, as shown recently in Nicaragua), on community resources, and on officials of other sectors, agriculture, health, community development, etc., to work in integrated teams, thus laying down the foundations for a global review of the modalities, methods and structures of primary, or basic, education.
3. Families must be involved in learning processes and in the expression of their needs, interests and problems. In such a way they may become part-time producers and consumers of a new education. At the same time, their role should be allowed to influence the methods and contents of school education. In this manner, they would accept more willingly that their children attend a school, the contents of which would be initially geared to their motivations, and thus reflect a reality they know and value.
4. Linkages must be established between primary education and illiteracy. This is obvious, yet very difficult to achieve in actual practice, given different structures, methods, personnel, funding potential, etc. But, to the extent this may be accomplished, a major bottleneck will have been eliminated.

Basic General Education for all

The second key issue to be tackled relates to the implementation of the right to education when it comes to children and adults of lower socio-economic strata. Often this category coincides with ethnic and /or linguistic groups or minorities in both developing and industrial-

ized countries. Priorities here need to be directed towards the solution of two broad types of difficulties:

1. The removal of material obstacles: income foregone, cost of food/clothing/transport, cost of school supplies and materials, school fees or dues, difficulties of conducting school work at home, etc. Solutions are akin to those mentioned earlier.
2. The revision and reorientation of the structure and content of education: Existing educational systems are conceived—even if they are not in their effect limited to—social reproduction, catering essentially to an elite. Yet, under the growing social demand, systems had to make room for new social groups but their purpose, structure, curricula, etc., remained unchanged. Under these conditions, priorities should be directed at finding ways to enable the acquisition by school children of all origins of basic instruments which will permit early school leavers to face the world of work and new social responsibilities with a significant preparation. Yet, this should not jeopardize the chances of those able and willing to pursue further studies. Put in other words: how can each level of the school system be an end in itself—become "terminal", as it were—and yet prepare some learners to confront, and successfully accede to, the next level? Perhaps the Egyptian experience can teach us much in this connection.

Principles of Education

Looking back at these two issues and the new priorities their solutions imply, we can check off some principles:

1. All citizens of all ages should have access to an organized, even if out-of-school, learning process responding to their needs.
2. Such a process should be accessible at moments coinciding with the needs of its potential users, both in terms of its frequency and its duration.
3. It should offer a large variety of "packages" or modules complementing past experience and competence and its goals should be based on terminal performance specifications designed jointly by "producers" and "consumers."
4. It should be integrated or articulated with existing formal school or out-of-school systems.

What we have very rapidly listed here corresponds in fact to a life-long or recurring educational system. Some of you may be tempted to say: "All that is attractive enough but highly general and in turn raises probably more obstacles than it may solve . . . ", and you would

be right. But how can we stop "doing more of the same" if we can't "do something new". This is where many of you, decision-makers, heads of institutions, and administrators, may rejoin and ask, "All right,let's try and do something new, but how do we go about it? Who decides? Who defines the new tasks? Who resolves empirically all the new and unforseen difficulties, resistances, frictions and even oppositions?"

Educational Reform

Here we come to the fashionable concept of reform. Who should define its objectives and means of implementation? How broad should it be in its scope? To these two questions I want to contribute some of our experience.

Prescription for Reform

In the first instance, how does one arrive at a valid prescription for reform? I might suggest how it should not be done: it should not be arrived at by a small group of planners who manage to convince the minister or the chief of state; it should not be arrived at by a group of policy specialists working only within a single ministry of public agency; it should not be arrived at without contacts with students, parents and, obviously, teachers. In short, a framework for a reform must be defined by all those who will subsequently be expected to participate in its implementation. Participation begins at the design or concept stage. Neither should the think-tank work alone, nor should it perform an artificial consultation on a "finished" or "semi-finished" product. That is too late. From the beginning, all branches of the educational administration and of other public services concerned should delegate their most experienced brains and voices so they, in turn, may confront their imaginative and creative potential with teachers, students, villagers or slum dwellers in order to allow the current to flow in all directions so that all concerned learn from the confrontation. "Change is learning together," says Michel Crozier, a French sociologist known for his work on the mechanics of decision-making in bureaucratic processes. He owes much of his theories to Herbert Simon, the U.S. economist and Nobel prize winner who is the author of remarkable analyses on the notion of an absence of an objective "right" decision and on the criteria of satisfaction of the decision-maker.

In education the decision-maker is as much under pressure from teachers' unions, students, and parents' associations as from his colleagues from other ministries, particularly finance. If he is given reform projects without a prior joint endeavor by all those he shall

have to face at the execution stage, his "criterion of satisfaciton" will be warped and his decision either sterile or fatal for his career and that of his advisers.

Range of Reform

The second notion is that of the range of a reform. If it is too ambitious it will simply spark off more resistance from interested parties than the decision-maker can cope with. He will need, in general, to "negotiate" his reform. Even in countries where democratic processes of consultation are considered tedious and spectacularly shortened, few are the leavers and decision-makers who have afforded with impunity a break-down in their relations with preferred parties such as teachers. Negotiations imply compromises and this in turn suggests a rather limited but perfectly identified and defined area for reform; this may relate for example, to administrative procedures, to personnel, to teachers' pay and obligations, to secondary school structure and curricula, etc. Any or part of these issues suffice. The aggregate of them becomes a monster whose lifespan will be very short indeed.

Naturally, when speaking of reform, we must, above all, be eminently realistic. A forerunner cannot embark on an education reform, even if it is partial as suggested, if its underlying principles, participation, say, is contrary to the predominantly political behavior pattern. If reform of education there be, it must be consistent with existing structures. Taking the example of participation again, it implies a measure of decentralization. Education alone, however, can hardly be decentralized if none of the other public administrative services are the object of measures in this direction. In short, then, sweeping changes are generally unlikely to produce lasting results without the involvement of all concerned and no change is conceivable in education if it is not in harmony with general political and societal functions and structures.

Conclusion

In closing, I would like to quote from our Director General's preliminary report on the UNESCO Medium Term Plan (from now until the end of the decade) which happens to coincide with what I believe is your principal concern; where does education fit, and how can it be made to fit better within the rapidly evolving and increasingly complex societies.

> Educational Systems will have to face, in the years to come, a two-fold challenge. On the one hand, equitable solutions

will have to be found to the demands for quantitative expansion of educational services in order to respond to the needs of all groups of children, youth, and adults. On the other hand, changes—sometimes radical changes— will be called for in the establishment of educational objectives, structures, curricula and teacher-training programs if education is to be made more relevant in the midst of societies subjected to rapid evolution.

Lessons from recent history have made it possible for us to apprehend better the multiple linkages between education and the various aspects of the development of societies: it is now clear that these interactions have an impact on issues considered up to now as "internal" to educational processes. Only if we (1), look at educational problems in a very wide social, economic and cultural setting; (2), take into account the acceleration of progress in the fields of science and technology and (3), recognize the importance of links between education, society, and development, will it be possible to find solutions enabling education to better serve both society as a whole and the individuals who give it life and meaning.

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SECTION FIVE:
Basic Education in International Perspective

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Curriculum Materials for Basic Education: United States

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Introduction

Curriculum materials for basic education cover a wide range of areas and concerns for social and individual needs of the learner. The amount of resource materials available for areas that relate to health, nutrition, citizenship, as well as basic communication skills, particular work skills, and career orientations are indeed vast. In the United States there has developed over the years a tendency to place resource materials for education into two locations: the individual classroom; and a centralized area frequently known today as a learning and resource center where one can find, depending on the particular center's development, a number and variety of resources that can aid the teacher and the learner in gaining experience in the areas of basic education.

The Learning and Resource Center

The learning and resource center was developed to aid future teachers obtain a practicing knowledge of a variety of curriculum materials; to collect, display, put into, and demonstrate a variety of ways in which teaching materials might be used for effective instruction. The Center is designed as a work place rather than as a typical library reading room. For example, various areas of prevocational specialization are placed in modules designated as economic educa-

tion, social studies, vocational career education, and health education. In each one of these working modules there are a variety of materials which are of a print nature which would not normally be found in an area library. The area includes instructional manuals for a variety of kinds of work skills, a variety of filmstrips, and films that demonstrate and instruct in the particular skill ara.

Career Education

In the area of Career Education, for example, there is a great deal of material that helps the learner and the teacher become familiar with career possibilities related to future job opportunities in the region. Complete audio-visual sets on a variety of careers in the industrial work sector are available. These can be used by individuals and/or for total classroom discussion. Most of the material is aimed at the middle school level (sixth, seventh, and eighth grades), where traditionally career choices are made. However, the materials can be adapted to the fourth, fifth, and sixth grade levels. The materials have such titles as: "The Future in the Armed Forces"; "Career as a Telephone Linesman"; "Your Future as a Medical Laboratory Assistant"; etc.

Materials

Another sector of the Learning and Resource Center concentrates on materials relating to reading, writing, and mathematics. Other areas of the Learning and Resource Center are hardware or viewing machines to teach the potential teachers how to use filmstrips, tape recorders, overhead projectors, and other pieces of teaching equipment, and teaches them how to help individual students use the materials effectively. A library-type of index is available to help users locate quickly specific kinds of materials desired.

Another segment of the Learning and Resource Center contains what is called a graphics materials laboratory. Here, a variety of raw materials serve as instructional aids to help prospective teachers prepare curriculum materials for classroom use: instructional practice is given for making overhead project materials, to create posters, charts, film, negatives, and a variety of other teaching materials that the teacher needs to know how to develop as part of the curriculum materials he/she may want to use.

Demonstration Area

Another part of the Learning and Resource Center is set up as a demonstration area where materials related to a particular area (for example, nutrition) are displayed in a variety of different forms:

through bulletin boards, using common resources such as newspapers, magazines, and advertising materials; demonstration displays of different types of food forms, their nutritional value, and the positive and negative explanations for the use of these foods for good health. Health occupations are fully described. These demonstration areas are put together and changed periodically with special attention to the area of the displays as to the subject areas being taught. Projection equipment of all kinds allows professionally-prepared films, slides, and tapes to be viewed by the teacher candidates to familiarize him/her with the techniques of use of an instructional aid, and how to evaluate it.

Career Education

In the United States, Career Education has become a major symbol for the development of prevocational information through exploration and the development of skills at the elementary and middle school level, usually grades kindergarten-ninth. An example of a *Career Education Instructional Plan* is as follows:

For a grade 8 social studies program, the school objective would be to analyze the strengths, weaknesses, likes, dislikes, and achievements in relation to possible career choices. The plan would list classroom objectives, teaching modes and methods, the learning environment in which it is to take place, the learning activities, and then the resources. The learning activities and the resources relate directly to our concern for curriculum materials. An outline of what will be done in this particular unit would include responses to questions such as, "Who will perform the activity?" (in this case, the eighth grade), "What activities will be performed?" (the selection of a tentative career), "When will the activities be performed?" (by the second half of the school year), "What is the content of the activity?" (this would relate to the tentative career choice of the individual involved). Materials to be used in such a study would be the utilization and completion of an interest inventory, the discussion of alternate career choices, and finally a presentation to the class on the selection of a career choice. There would be a general viewing of the film, "Your Personality, the You Others Know," the completion of a student profile, the presentation of final career choice, and paper with student teacher-developed visuals.

To approach the career choice and study, there has been developed a family of careers in various areas of concern of this conference. Agri-business and the natural resources areas is one example. This cluster encompasses forestry, which would include occupations con-

cerning the developing, maintaining, cultivating, and protecting of forest tracts in woodlands and harvesting their products. Film, filmstrips, and print materials are available, as well as the use of business and industry personnel who would serve as curriculum resource people as the area of study progresses. This, in turn, would lead to work-study programs where the career candidate would work part-time summers or otherwise in the forest industries.

For each of these occupation areas there are print and audio-visual materials available, as well as materials developed by government resources in the United States. The U.S. Superintendent of Documents Office, as well as a number of free materials available through companies who are in business, provide curriculum materials.

Free Materials

As we discuss curriculum materials in the basic education area, we need to explore the area of free curriculum materials. The 1980 37th Annual Edition of the Educator's Progress Service, Inc., includes 1,669 items of educational value for the year 1980. Over half of these are new items which become available during the 1980 year. These resources can become important supplemental curriculum materials for areas such as industry-sponsored educational materials, conservation education, forestry, and health education, among others.

Resources available in health education include facts concerning air pollution, answers to the most often asked questions about cigarette smoking and lung cancer, common childhood diseases, and common cold facts. A particularly interesting curriculum resource listed is a booklet on women and health. This includes a series of ten articles on health concerns of women today, including new information on high blood pressure, techniques for cancer detection, nutrition, consumer product safety, and the care of children. Any young woman entering the world of work could be helped considerably by such information.

In the area of home economics there are booklets available about textiles and the kind of job situations we find in textiles.

We have to be careful that we do not select biased or nonfactual materials from the free materials available. However, these free curriculum materials can be very current and update many textbooks. They can be used by teachers very effectively because of the chart illustrations and pictures that are often included.

Prevocational Mini-Courses

A series of mini-courses developed by a middle school in the

United States was aimed at prevocational information and education of sixth, seventh, and eighth graders. The staff was developed within the school by assigning teachers with specialized vocational skills to work with one or two specialized mini-courses a week, in addition to their regular teaching loads. Individuals within the community also were invited to give instruction in these mini-courses. The purpose of the mini-courses was to have students at this age experience prevocational and beginning vocational skills in a number of areas. Usually, each student was exposed to two mini-courses per semester. If a special interest was developed by a student, there could be a continuation of the same mini-course.

Examples of Mini-Courses

Communication Skills: Developed in actual settings where students were placed in situations where they had to deliver speeches, conduct interviews and do a number of things that they might be called upon to do during their work experience.

Foods Around the World: Will give the students a chance to look at foods and the food industry and explore basic nutrition through different food sources from a variety of countries.

Let's Sew: A beginning sewing course where a student can go as far as possible learning basic instruction related to sewing by hand and with machines.

Art: Courses offered in ceramic wheel throwing and sculpture as well as a course in enameling and jewelry development.

Plastics: A laboratory class of students will gain experience with liquid casting heat forming, the reinforced build-up in chemical expansion of plastics. Design instruction was involved.

Small Gasoline Engines: Includes both theory and maintenance of four-stroke gasoline engines.

Woodcrafts: Involves experience in using the media of wood which included the classification of natural woods and the many man-made products. Power machines are discussed and used, including safety skills needed to operate such tools as a scroll saw, bend saw, wood lathe, drill press, desk sander, belt sander, hand drill, router, etc.

In this vocational program setting, you can see that the curriculum materials included actual work experience situations under the instruction and supervision of an expert in the area. Here curriculum materials became the actual wood, plastic, metal, as well as the print and filmstrip materials which described ways and means of working with the materials.

Work-Study as Curriculum Materials

There is a need for the development of competent personnel in both developing and developed countries for qualified technical and middle management personnel. There needs to be a broad educational base, starting at the elemantary and middle school level, of potential manpower informed about the career and job needs of their community, state and nation. We must have ways and means for students at this level to appreciate and understand the competence and skills needed to function adequately. Work-study programs that combine schooling and business/industry and other segments of the work world can do much to build competent personnel for the world of work. The elementary schools must provide student skills in the areas of communication and computation—reading, writing, mathematics—and give them a broad understanding of their responsibilities for the health, welfare, and citizenship responsibilities to their nation. The middle schools should offer continued study in the skills necessary to perform a job adequately. This can be done through cooperation with government, business, and industry sponsorship of work situations for the emerging young man and woman to complete their education at the technical middle management level. This on-the-job learning experience is a different curriculum material, but a most important one, for it involves the learner in the actual work expectations and conditions that he/she would face as he takes on his adult role responsibilities.

In essence, then, we are saying that curriculum materials for basic education encompass not only the learning tools found in schools, but also the learning settings in the work world found in the community. Having teachers in the school team up with teachers from the work world can develop a citizen who can be effective in his/her emerging society.

Linking Basic Education to Community Development: United States

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Three Essential Elements of Community Development

How do we in the United States bring knowledge or first-hand experience of the community, state, or nation into the curriculum of grades one through nine? Certainly, not all elementary and junior high school teachers in the United States are successful in teaching about community education, but there are basic steps that can and should be taken.

The first essential for effective community education is that the teachers understand about and have an appreciation for the community in which they are teaching. In part, the teacher preparation curriculum supplies the background for such appreciation and understanding. Courses in general education, social studies methods, and disciplines such as political science, economics, and sociology should assist the pre-professional student. Experienced teachers also have the opportunity to take courses which should help them improve teaching about the community. Needless to say, both preservice teachers and experienced teachers will need dedication and motivation, as well as the support of their supervisors and administrators, if they are to utilize the information and attitudes concerning community education which they have received through courses.

The second essential for effective community education is that the school itself should be considered as a model of the community. By full participation in a school which is typical of a community, students will have an opportunity to learn first-hand how the community operates and how the community might be improved. In order to establish a model community school, there must be much involvement in and participation by community leaders in the educational process. Classroom teaching can be enriched through visits to the classroom by such leaders, who can explain how the community operates and what problems are faced by the citizenry. Visits by individual students or groups can add to the experiences of such students. Community visits will require the complete participation and support of community leaders.

The third and last essential for effective community education which can be presented in this short contribution is that the teaching process be an effective one. Much research has been conducted concerning the teaching of community education and the general conclusion is that such teaching is most effective when there is a combination of cognitive activities and laboratory experiences. The teacher has a broad base of teaching techniques and teaching materials which should make cognitive activities successful. Too few teachers utilize the philosophy, espoused by John Dewey over a half century ago, of "learning by doing". Successful teaching and learning about the community must include practice in solving community problems. The resourceful teacher can guide the students in the selection of such community problems. However, even greater teacher skill will be required if the student is to help solve such problems and to apply those solutions to typical problems of the future.

Articulation of Basic with Secondary Education: Nigeria

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Historical Background

The present system of education in Nigeria is a product of the work of European missionaries who arrived in the middle of the nineteenth century. Their objectives were very simple. First, all the various sects who at one time or another participated in the work of education were agreed that literary education was absolutely essential for their work of evangelization and "the moral and intellectual elevation of the people". In other words, the main objective of missionary education was to win people from "paganism". The mission schools which were established were therefore no more than agents of evangelization and all that was considered necessary and essential was the four R's, aimed primarily at promoting the knowledge of the Bible through reading religious tracts translated into the vernacular. School and church understandably became inseparable.

The emphasis on adult education had to be reversed because the missionaries found it most difficult to convert the adults from their traditional religions, and it was thought that attention to the conversion of the young ones would be a more fruitful policy. This period coincided with the coming of European traders who were gradually bringing attractive manufactured articles to the Nigerian market. The need for interpreters was being felt and some parents were therefore willing to send their children to school to learn "the white-

man's magic". The missionaries, too, were quick to take advantage of this situation to advance their policy. They were perfectly satisfied with people who acquired this type of rudimentary education and so did not find it necessary to institute any programs of teacher training. In fact, they strongly believed that the best people for the propagation of Christiantiy were those who lacked literary education but could read the scriptures and preach the gospel.

Character training formed another cornerstone of missionary policy at this period and long after. This emphasis arose from the belief that the African had little sense of morality. The African was erroneously believed to be sexually promiscuous and slavery and human sacrifices were thought to be part of his life. The attempt to save their young "captives" from this "deplorable" situation led missionaries to the establishment of boarding houses where children stayed with them in order to imbibe superior morality, and were removed from "the corrupt influences of their parents". But one must point out that the moral values advocated by missionaries were essentially different from those valued by the African society at the time. For example, unlike the missionaries, Africans had nothing against poligamy. In the same way, they admired a good dancer, who was regarded by missionaries as a sinner.

Finally, the missionaries did all they could to encourage technical education, even though later on they were criticized for producing people who were not willing to use their hands. This is an unfair criticism, for missionaries certainly encouraged agriculture and made special grants for schools which included agriculture in their curriculum. In fact, they attempted industrial development such as brick making, cotton industry, coconut fiber production, and so on. Their efforts did not yield much results because of the colonial policy of keeping subjects as producers of raw materials. Those who took to technical education found it difficult to get employment and, when they succeeded, they were not well paid compared with their counterparts who pursued literary education.

Missionary education came under strong criticism during the last two decades of the nineteenth century and the government began to show concern, as seen in the attempt to exercise some control through the provision of funds. An ordinance was promulgated in 1882, perfected in 1887, for the purpose of regulating education and grants based on examination results. An inspectorate was also established. The problem of teacher training, the improvement of the curriculum, and attendance were tackled.

From the time government came in, efforts were made to improve

the quality of the teaching staff and to improve their condition of service. The school curriculum, too, was slowly expanded and quality control became an important aspect of government policy.

Because of the vastness of the country, the poor communications, and the diversity in culture, it became difficult for a single educational system to be followed. In the South for example, western education made considerable progress through the activities of the missions and government. In 1921, there were 154 grant-aided schools, 53 government schools, and more than 2,000 unassisted schools attended by some 150,000 pupils.

In the Northern part of Nigeria, the growth was much slower because the activities of Christian missionaries were restricted, particularly in the Muslim areas. In fact, a new system based on the Sudanese experience under Cromer was worked out to avoid the much criticized result of missionary education in the South. Thus, in 1918, there were only 17 schools in the North, increasing to 30 in 1921. By 1926, the number had grown so fast that the government was already planning to close some of those schools considered below standard.

Basic Education

Prior to 1953

Before E.R.J. Hussey, Director of Education for the whole of Nigeria, came with his reorganization proposals in 1929, the system which evolved over the years up to that time consisted of three grades: infant section (1-2 years); primary (consisting of Standards 1-6, examination followed); and secondary 1-4 (students were expected to join the secondary section in Std. V).

The idea of articulating basic education with secondary had not arisen. The missionaries who still controlled education were not keen on the expansion of secondary education. The few secondary schools were sponsored by traders and interested parents who knew the value of education. Most children stopped in Standard V, i.e., as soon as they could find good jobs. Only a few went to secondary schools, and fewer still completed secondary education.

Hassey's regrading of schools was the most important innovation he achieved. For the first time, the school system became rationalized. He proposed three grades; elementary, middle, and higher. At the end of each grade, there was to be a break at which an examination must be passed. After completing Elementary IV, those who passed the difficult examination were allowed to go on to the district schools to continue Lower Middle I and II. Those who could not proceed further

were presumed to have acquired sufficient education to enable them to cope with life. Many of them became teachers, catechists, clerks, and so on. Hussey, however, planned that they should go back to the farm to produce food. The fact that many of the pupils entered school late made this break quite tolerable, even though the plan was violently criticized. Those who were able to go on to Lower Middle II had an advantage of being more mature. The idea of this intermediate state seemed to be a way of articulating elementary education with secondary school. Those who entered the secondary school after completing Lower Middle II were expected to finish their secondary education after four years. This scheme was followed with only slight modification until the fifties when the 1951 constitution put education on the concurrent list and each of the three regions was free to follow its own pattern.

1953: A New Scheme

The Western Region introduced a new scheme in 1953 comprising: the Primary School - 6 years; the Modern School - 3 years; and the Secondary School - 6 years. There was no longer any infant department. Pre-primary classes were optional, the primary section remained six years long because it was realized that Hussey's suggested break in Std. IV to enable children to go back to the farm was not realistic. The restriction placed on further education by suggesting enhanced fees and a difficult examination worsened the situation. Critics of the plan still hold today that to arrest the education of sections of the population at predestined stages is to stunt the growth of the individual and of the economy of the people. In fact, it was soon known that boys forced to leave school at this age, in the town at least, drifted into blind-alley jobs and in a short time created unemployment problems which the proposal sought to eradicate. Moreover, at that stage, boys are not sufficiently mature physically or mentally to make possible a reliable selection of those boys who would profit by further education. It is of interest to know that this proposal could not be enforced because of the great enthusiasm by Nigerians to continue their education beyond this stage.

With the rapid increase in enrollment, the enforcement of the age of entry to schools, and possibly the fact that higher standards were expected by employers, it became necessary, after 1951, to extend the period of basic education beyond the Primary VI. The introduction of the modern school was an attempt to achieve this. After six years in the primary school, children were provided with the opportunity of a choice between going to the secondary school or entering a modern school. Those who entered the secondary school directly were pre-

pared for a general education leading to the School Certificate, an equivalent of the Senior Cambridge Certificate. It was discovered that not all students found themselves capable of going through the secondary education: Many who were capable could not afford it. Such students looked for something which took a shorter period and was less expensive. The modern school satisfied this. It was a three-year course with a wider curriculum than the primary, but without the depth of the high school curriculum. It began as an experiment in the then Western Region.

The aims were: to teach practical skills that will be useful in the pursuit of certain careers; to provide a well-rounded education for graduates of primary schools; and, to teach elementary commercial subjects. Later, graduates of modern schools provided the bulk of recruits for teacher training, trade centers and clerks, i.e. the bulk of the middle class group.

The Objectives of Education Today

The objectives of education have not changed much since the days of missionary control. Even though government has taken over completely the direction of education in many states, the missionaries still play a dominant role. In fact, they are disputing the recent takeover of schools by government and are struggling to stage a comeback. The production of school graduates of good character is still pursued. For the missionaries, goodness of character consists mainly in the exemplification of the Christian way of life, while the colonial government believed that good character should make the products patriotic and obedient servants of His Majesty's Government and emulating the British way of life. The current clamor for moral education and the inclusion of habits of discipline as an aspect of qualitative education is another way of harping back on a favorite theme of the colonial era. The current objective of transmitting knowledge and training people to acquire technological skills is not new. As seen earlier, knowledge and skills were transmitted in small doses consonant partly with the level of cognitive and psychomotor abilities the African was considered to possess and partly with the administrative, commercial, and evangelistic requirements of Western imperialism.

It may be thought that the enunciation of educational objectives by Nigerians themselves, starting from the fifties and culminating in the promulgation of a national policy on education in 1977, heralded fundamental changes in the scope and direction of the objectives of Nigerian education.

We launched Universal Primary Education (UPE) in many states

of the country, and the 1969 curriculum conference considered carefully the structure of our education. We have seen three development plans, but these have not completely broken away from the inherited colonial educational system.

Expansion and Innovation

This is not to say that nothing has been achieved beyond what was inherited from the missions and the colonial government. In fact since independence, huge amounts of private and public funds have been injected into the expansion of education. As a result, enrollment at all levels has risen phenomenally.

In the same way, expenditure has been rising sharply for the past 20 years, not only in the absolute amounts, but also as a percentage of the total expenditure. For example, the Western State spent 25% of its total expenditure on education in the 1972-75 period, and now Oyo State devotes 31% of its total approved budget estimate to education.

In addition, there have been a lot of innovations, especially under the military government. Among these were the introduction of central planning for education, government takeover of the management of schools, the establishment of federal government colleges in nearly all states of the Federation to foster national unity, the harmonization of teachers' conditions of service with those of the public service, etc. But, perhaps the most important of them all is the launching of the UPE (Universal Primary Education) in 1976 and the publication of the "National Policy on Education" in 1977, a bold step by government to evolve a new philosophy of education and mechanisms for financing education, offering guidelines on the operation of the various educational sectors.

Inequities in the System

Although the concern to achieve our national objective is dominant in all the planning stages, the education system seems not to have been fully geared to lead to the attainment of the stated objectives. If the educational system is to achieve this, the planning strategy must transcend the present emphasis on the supply of skilled manpower to the development of appropriate values in the young Nigerians that pass through the system. So far in our new planning, education has been regarded as a capital good and the objective of educational planning has been essentially the creation of skills for economic development. For example, in the 1962-68 development plan, the function of education was to solve the problem of the short-

age of senior managerial staff who would man the key positions in various sectors of the economy. This was the recommendation of the Ashby Commission a few years before. In the 1970-74 plan the concept was carried further by regarding education as human capital to the extent that the development of skills as a factor of production was emphasized. Thus, in addition to making education available to every child up to primary school level, skill was emphasized in the process of social and economic development. In the period between 1975-80, an education plan which ensured that every citizen was given the full opportunity to develop his intellectual and working capabilities for the benefit of himself and community became dominant. It is clear that this emphasis resulted in other aspects of education being overlooked, e.g. morals, attitudes, and values. The quality of education was being measured in economic terms. Certainly, education is more than mere creation of skills. This idea is clearly shown in the "National Policy on Education" in the various ideas such as the inculcation of national consciousness and unity, the inculcation of right attitudes and values of the society, and the acquisition of appropriate skills. Even though most of the ideas are but expressions of intent, they at least show that we are aware of the goals of education.

Since 1976, primary education has become free in all parts of Nigeria and the new National Policy of Education which sets down a new structure will begin operation in 1982. The structure is 6-3-3-4 i.e., six years of primary education, three years each of junior and senior high school, and four years of university education as oposed to 6-5-2-4 used previously. Since this system has not started to operate, not too much can be said. Nevertheless, the arguments in support of this new system with respect to primary and secondary levels can be summarized.

The present system, whereby a proportion of the most talented children are drawn off at the age of 12 to undergo a form of education which is strictly academic, is regarded to have disadvantages, including a number of unnecessary cleavages in human society. Nor can it be said that it achieved the objective of gathering together the bulk of the most intellectually gifted to be prepared for higher posts of responsibility in the future. The entrance examination to secondary schools at the age of 12 does not give opportunity for late developers to escape through the meshes of the net, and many others whose parents could not afford secondary education do not bother to enter for the examination. If they entered and were successful, they would not take the place offered them. Many other factors enter into the selection with the result that many bright children cannot gain admission. Yet,

many of those accepted for whom a different form of secondary education would have been more appropriate failed to make good in the grammar school.

The New System of Education

The new system (though this still has to be worked out carefully) may not require any entrance examination as is now the case in some of the states where secondary education is free. The only criterion would be the ability of the parents to pay fees and buy books.

The majority of the children in the proposed junior high school will spend three years, and those found, during guidance procedures, to be suitable for grammar schools (senior high) will be allowed to transfer to these schools at the end of the three-year course.

The spectrum of the junior high school will be wide, calling for diversification of courses at the early stage. During the first year, it should be possible, using aptitude tests to group them. It is visualized that a great deal of flexibility will be built into the procedure to ensure easy transfer form one stream to another, with minimum strain, so that the process of studying the children as individuals, of trying them out with different studies and skills and recording their degree of success can be carried out continuously.

It seems to be agreed that the various groups would be exposed to the development of manual skills, e.g. woodwork, metal work, gardening, home economics, agricultural projects of all kinds, and animal husbandry. Some may learn typing and others may do preparatory courses leading to entry into trade centers. In other words, those with less academic skills would have the opportunity of doing what they are capable of and the country would be the better for it if the logistics of the whole exercise being worked out by the implementation committee is carefully done.

If everything goes as planned, it will be possible for students who complete the junior secondary to go into trades. Even if they have to leave school, they will have gotten some idea of what they can do to earn a living. If they enter the trade centers, many of which are being opened, they will come out ready to hold technical posts for which there is great demand. By this arrangement it is expected that those who are suited to academic work will finish in the senior grammar schools and pursue further studies or enter the job field.

Conclusion

From the foregoing, it will be clear that the Nigerian experience has, at least in the recent times, indicated the awareness of the need

to articulate basic education with secondary school. Despite all the many attempts at achieving the objective, there is yet no final answer to the problem. The attempts, especially during the independence era, are directed more toward the solution of social and economic problems which call for deeper rethinking. The effects of the introduction of UPE all over Nigeria will be felt by 1983 when a large number of students will come out of primary schools. At this stage Nigeria will be forced to pay more attention to the problems of articulating basic education with secondary education and will have to turn to the experience of countries which have tried many solutions, as it has done in other areas.

Citizen Education: United States

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Political Socialization: Three Orientations

Information and attitudes about politics develop, of course, through the process called political socialization. This is the part of the total socialization process which relates to an individual's body of beliefs, attitudes, values, and knowledge having to do with the formal and informal aspects of governments and political systems.

The process of political socialization universally functions to develop three rather distinct political orientations. The first is composed of political beliefs, attitudes, and information about government in general and political systems in particular. For a long time, children were assumed to be essentially apolitical; that is, the acquisiton of knowledge about and feelings toward a political system were assumed to begin in late adolescence or early adulthood. Recent research into these questions indicates, however, that in most nations even very young children are set afloat in a sea of influences which both inform them and affect their beliefs about the political system.

A second type of political orientation is the predisposition to be active or inactive in politics, to affect the course of political events or to be more passive and to accept the consequences of government only. A number of factors, among them sex, socioeconomic class, and educational level, have been found to be significant in developing predispositions to political activity.

The third type of political orientation is an attachment to fac-

tions, parties, or particular points of view within the system. People learn their attachments to political ideologies, and the learning process begins quite early in life. As with the other orientations to politics, the acquisition of partisan points of view is greatly affected by a variety of social forces.

The Influence of Family and School

As one might expect, the societal institution which has the greatest early impact on the development of these orientations is the family. Researchers have found strong relationships between the political orientations of children and certain characteristics of the family (e.g., socioeconomic status, educational level). Despite these strong links, it is clear that other social agencies and institutions also influence this development, and schools are one of the most important of these.

The relationship between political socialization and formal education is probably as old as schools. Through history, schools have often been seen as important agents in developing political commitments. Certainly, educational systems in the modern world have been assigned, in part, the task of instilling the loyalties, belief systems, and sentiments necessary to support a particular system and to equip young people to play appropriate citizenship roles in it.

The influence of schools on political socialization may occur both indirectly as a function of the normal schooling process, or directly, as a function of programs of political or citizenship education which are planned to produce certain kinds of outcomes. In some nations (Great Britain, for example) the role of formal schooling in citizenship education is indirect, with very little overt attention being paid to the development of good citizens through formal, conscious attempts. Nonetheless, British schools appear to play an important role in this process because of the influence exerted on students by the social climate in the schools, which helps shape students' views of the social world and their place in it. In most nations, schools also have the explicit goal of inculcating the tenets of "good citizenship" as a basic function of educational systems. In these nations (good illustrations are the U.S. and the U.S.S.R.), formal courses or experiences are designed to help develop political orientations.

Citizenship Education in U.S. Schools

Theoretically, at least, citizenship education in American schools is based on a model of what the "good" citizen of a democratic society

should know and believe. This concept is derived from Western liberal democratic thought as enunciated in eighteenth century political theory. It involves several beliefs, among them that governments receive a mandate from the people (i.e., they "represent" people), that citizens have the obligations to be well informed about issues as well as to know the forms and structures of government, and citizens are expected to be active in public policy-making. Further, citizens are expected to be committed to those principles which are considered as basic to the system. In the United States, these principles are usually thought of as the ones embodied in the Bill of Rights.

From earliest times it was apparent that the American school system was intended to help train citizens in these ways. Jefferson, for example, believed that a democratic government could only work if the common citizens were well-educated, and his argument was used in support of the first publicly-supported schools. In a sense, the early public school systems were built for the purpose of educating citizens to play their proper societal roles and to encourage loyalty and support for the national government.

Formal citizenship education continues to be an important aspect of the modern-day school system in the United States. Direct attempts at citizenship education begin very early in the school life of the child and continue throughout the public school experience. At the risk of oversimplification, this process could be described as having three basic characteristics.

Three Characteristics of Citizenship Education

Symbols. An important aspect of political socialization is the development of a set of attitudes toward the symbols possessed by a particular system. Most schools in the United States will attempt to provide illustrations of and information about major political symbols. For example, the American flag will be prominently displayed in most elementary school rooms. In many instances, children and teacher will begin the day with the Pledge of Allegiance to that flag. Early on, children learn to sing the national anthem and other patriotic songs. Roles are also seen as important symbols, and are personalized as much as possible.Photographs of the President or the governor of the state or key members of the state legislature or Congress will be displayed and discussed with the children. They are introduced to the process of voting largely in symbolic terms. Frequently they are encouraged to participate in political events in the classroom by "electing" class "presidents" or other officers or by staging mock elections within the classroom at the same time that adult voters are

going to the polls. In these ways, young people are taught the symbols of the United States political system and are encouraged as well to participate in the events of that system.

The Curriculum Content of Citizenship Education. In addition to attempts at developing positive feelings toward the symbols of the political system, American schools attempt to provide a substantial amount of information about it. The primary responsibility for citizenship or political education is borne by the social studies program. Indeed, virtually all of the states have laws requiring that students be instructed in the ways of citizenship, and this instruction usually involves subject matter from political science and history (topics like the United States Constitution, American history, state history and the government, and so on.)

The great diversity in the curriculum of American schools makes it impossible to describe precisely what is taught at any grade level which relates to citizenship education, or even to say what content most of the nation's children or adolescents will be studying in any given grade. It is possible, however, to describe a curriculum pattern typically used in one state and what follows is a very brief summary of the political content of the social studies curriculum in the state of Minnesota, which will serve to illustrate the content of citizenship education.

In grades one to three (ages six to eight), the curriculum is dominated by instruction in reading and by the introduction of concepts from arithmetic. As a consequence, the curriculum in social studies education is not at all extensive. Children will usually study something of their immediate environment—the city or town in which they live, and occasionally, they will learn about those who live in another culture or nation in the world.

The political content of the curriculum is necessarily and obviously sparse. It consists basically of attempts to build allegiance to the symbols of the system (in the ways described earlier) and brief studies of the lives of important political figures (e.g., Washington, Lincoln, Kennedy) and some national leaders from minority cultures (Martin Luther King, Caesar Chavez). Often these studies are associated with the major holidays of the school year. If there is a unifying theme to this study, it is the idea that all societies develop laws or rules about the ways that people should live together. The curriculum content which develops this notion is supported by the establishment of rules and regualtions within the school.

In grades four to six, formal "courses" in social studies emerge for the first time. During these years, children will study aspects of world

geography and will spend the better part of on year on the history of the U.S. This course is a narrative history with the emphasis upon the story of the nation's development from colonial time through the Civil War period to 1976 approximately. Topics treated in this study will most typically include the formation of the national government, the Constitution and of the many compromises that its adoption entailed, the major problemns that had to be solved in the early years of the Republic and the roles played by the early political leaders. This study is most often intended to support feelings of pride in the development of a large and powerful nation from small and humble beginnings.

During the junior high school years (grades seven to nine), students continue to study formal courses on the social studies, most often geography, history, and civics. The political aspects of these courses include instruction in the structure of local, state, and national government. As is the case in earlier grades, there is usually an attempt to build support for the political system, its symbols, and its accomplishments.

In high school (grades 10-12), students are exposed yet again to the study of social phenomena, usually through another course in American history and one in government, sociology, or economics. Many schools will require a course in world history or area studies also.

These formal courses in social studies are frequently justified by their assumed contributions to citizenship education. It is the frequent claim of teachers that such courses contribute to "an understanding of the multicultural heritage of America and how this diversity affects people today" or that they build a "commitment to the basic freedoms enjoyed in the United States." Obviously, the degree to which these claims are realized or are merely rhetorical varies tremendously from classroom to classroom.

Methodology. One of the major assumptions of citizenship education in the United States is that the responsible citizen is able to analyze and make judgments about current social issues involving conflicting values. Many social studies teachers and educators hold that education for citizenship must include instruction related to that assumption, instruction in the skills of data and issue analysis. These people attempt to point their instruction toward the development of what is called "reflective" or "critical" thought. Teaching which leads to critical thinking is characterized by instruction in the skills of data analysis, the rudiments of logic, and the open discussion and study of social and economic issues, which reveal the passions and conflicts in American society.

The above comments, of course, deal with direct attempts at citizenship education. What of the indirect influences of the school on the political knowledge orientations of American youth? Research into the effects of indirect citizenship education has centered on testing the effects of variables like the rule and norm structure of the school environment. While this research is far from conclusive, findings generally support the contention that different rule structures and different school environments produce different attitudes toward politics. The ways in which teachers organize their classrooms, their willingness to allow discussion of social issues, and the opportunities presented for participating in decision-making about rules, for instance, appear to affect the acquisition of students' skills and attitudes.

Criticisms of Present Practice

Virtually all aspects of American education have been subjected to extremely careful evaluation, analysis, and criticism. Citizenship education is no exception. The sheer volume of research and comment on this subject prohibits comprehensive discussion here, but this case study would be incomplete without mention of three distinct and substantially different assessments of the value and effectiveness of citizenship education.

By far the largest volume of comment comes from social studies educators. Usually these are university-based educators who specialize in social studies education or in the social sciences. While some of this comment applauds what is judged to be appropriate practice, far more is sharply critical.

These critics contend that much of the content of the social studies in general and citizenship education more specifically ignores the perspectives of modern scholarship in history and the social sciences and presents an oversimplified, overly optimistic picture to the student. Further, they hold that young Americans do not develop strong commitments to basic principles such as freedom of speech, largely because their citizenship education has failed them.

Moreover, some observers deplore the excessive concentration on the study of American society to the detriment of education for world perspectives. This group emphasizes the existence of a world society and a world-wide social system and deplores the fact that these concepts receive so little attention in American schools and universities. Most of the critics in this category support a pedagogical strategy which would encourage critical or reflective thought; they conclude that this methodology receives lip service only and that precious little

critical thought goes on in the courses that relate to citizenship education.

Another strand of criticism comes from a totally different direction, from those professing a very conservative social ideology. This group (composed of conservative teachers and community leaders) want the schools to inculcate attitudes of loyalty and support for the American political system. They view much of the content of political education as fostering attitudes which they believe to be imcompatible with American ideals and values. Whereas the other critics see too little "openness" in social studies classrooms, this group believes that even secondary school students are too young and immature to engage issues critically and that social studies teachers should not use a methodology which seeks to inquire critically into what they believe to be alien and unpopular ideas.

The smallest group of critics presents probably the most holistic criticisms of existing practice. This is a group of educators and social scientists who contend that the schools' major contribution to citizenship education is the support and reproduction of the "elite" of the the "dominant" culture. According to this view the school affects political socialization by perpetuating the existing inequities in economics and in politics. This is accomplished in largely indirect, subtle, and unconscious ways: schools are alleged to support the values of certain social classes, thereby making those values legitimate and others illegitimate. Thus, schools are deeply involved and quite effective in teaching students to accept without serious question the existing political/social system. Needless to say, these effects are not the ones encouraged by the critics.

Summary

In view of the great diversity among programs of political education in the United States and the sharp differences of opinion as to its value and function, what can be said for sure about it? It is very tempting to simply agree with the groups of scholarly critics. Citizenship education in the United States has probably been overly concerned with the celebration—and even the glorification—of the American nation. From the earliest it has been associated with the efforts at "nation-building," whether directed at native-born American youngsters or at the children of immigrants. Too often, programs of citizenship education have presented the United States uncritically as the embodiment of democracy and progress, in technology and politics alike.

It seems to me that such criticisms deal with only part of the

situation, however. Given all of the constraints and the pressures on formal schooling, it is logical to assume that programs of citizenship education would be part of the support structure for the political system. Citizenship education in the United States has been largely a conservative force in that it has helped to maintain a stable democratic culture.

The real quesiton it seems to me, is the extent to which formal citizenship education programs develop more than basic loyalty to the system. Do students have opportunities to deal with issues openly? Are they offered chances to deal with the complexities and the contradictions in political systems? Are they encouraged to be active members of the system?

American schools, I think, have done far more than encourage students only to be loyal to the system. There is not a solid research base for that statement, but several studies provide at least a glimpse into the other effects of the process. For example, Almond and Verba in their book, "The Civic Culture: Political Attitudes and Democracy in Five Nations", note that American students have more opportunities for open discussion and participation in political life than do students in other countries.

Such studies are far from conclusive, to be sure, but they do indicate the real possibility that citizenship education in the United States is not the disaster area its most vitriolic critics maintain.

Basic Education in Science and Technology: United States

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Introduction

In the late 1950's to the early 1970's, the United States Government and many of the states spent considerable amounts of money on curriculum development, production of materials and equipment, and inservice education. A substantial amount of research has been completed during the last decade, but especially in the past few years, analyzing the relative impacts of various programs. Other studies have been conducted that focus on student achievement, school curriculum change, and teacher education.

Data from these studies and observations of school programs enable us to make some generalizations regarding the recent efforts to continue to improve the teaching of science and technology in American elementary and secondary schools. These generalizations regarding program development should influence educational policies, and are especially important when trying to develop programs that emphasize science process skills, practical applications of science, and critical thinking skills. Such objectives are not likely to be achieved by the majority of the citizens without substantial and continuing efforts.

Some Suggestions for the Improvement of Science and Technical Educational Programs

Generalization 1

Schools should decide what their educational goals are and select or develop materials designed to achieve those goals. Materials designed with a cognitive emphasis are more apt to facilitate achieving cognitive goals. Materials designed with a process emphasis are most likely to achieve process goals. Materials designed to achieve practical results are most likely to facilitate practical outcomes.

Materials designed to emphasize more than one objective will usually succeed in achieving more than one objective in use, but time devoted to each objective will normally have a profound effect on the extent to which the objective is achieved. Class time devoted to learning appears to be strongly related to mathematics learning and also to learning of science. If class time is not spent on learning certain objectives of science, students are not likely to learn much related to those objectives. If class time on an objective is reduced, the probable result will be a decrease in learning that objective.

Generalization 2

Data need to be collected on student achievement on a systematic basis to determine to what extent students are learning the desired objectives, the changes in the materials, and the instruction. Providing schools with instructional materials and equipment does not mean the school and the teachers will implement the materials as they were designed. Changes in staff may also bring new teachers who do not understand the program. Systematic evaluation will help guide a program and assist in making changes that strengthen the program. Lack of evaluation frequently leads to lower results and a decrease in the effectiveness of the program. If you have no evaluation, you have no basis for making judgements about your program.

Generalization 3

Science programs (especially at the elementary school levels) that require expensive equipment and substantial teacher time to prepare activities and to maintain supplies will usually receive lower acceptance by teachers and normally will not be retained as long as part of the curriculum. The use of simple and inexpensive equipment is more acceptable to most elementary school teachers than complex, expensive equipment. Schools are also better able to purchase materials, repair damaged items, and replace lost or used items when they are

inexpensive. If budget limitations are severe, this generalization becomes even more important.

Programs that require extensive teacher time for the preparation of laboratory equipment and activities and for ordering and maintaining supplies are less likely to be used as designed and are less likely to be continued as part of the curriculum than programs designed with careful consideration for teacher time. The impact of teacher time required by the program increases as the number of assignments for the teacher increases. Therefore, the impact is normally greatest on the elementary school teacher who teaches a self-contained classroom and who is responsible for all subject areas.

This does not mean that programs that use complex and expensive equipment and that require substantial teacher time to prepare for class cannot be better programs. If funds and personnel are provided to maintain such programs, they can and do succeed. Many schools, however, cannot or will not make the funds and personnel available on a continuing basis.

Generalization 4

Inservice education regarding the philosophy and use of curriculum materials will increase the effectiveness of the use of the materials and increase student achievement. If inservice activity is reduced, the effectiveness of the program is usually reduced. Many schools do not provide adequate inservice education when beginning a new program. Even more schools do not provide inservice education on a continuing basis to assist new staff and to improve the program.

Two of the major reasons for the lack of success of some science programs in American schools (particularly those programs emphasizing objectives other than cognitive objectives) have been that the teacher did not understand the program or did not agree with the philosophy of the program. These two teacher variables have been major problems in implementing elementary school programs that emphasize science process skills. They have also been problems in implementing a number of mathematics programs.

Lack of inservice education is likely to lead to substantial loss of learning by the students and frequently results in curriculum changes for the wrong reasons. Lack of inservice education appears to be one of the major reasons for cyclic changes in the science education curriculum. We do not prepare the teachers to use materials that will accomplish the broad objectives of science. Hence, teachers tend to use more traditional materials and activities and the broad objectives of science are not achieved.

Generalization 5

The development of new programs should be considered as innovative activity. It should be recognized that innovations take time and energy to develop, time and energy to spread, and time and energy to implement. Innovations in most fields such as engineering, medicines, and others do not spread rapidly and require substantial investment. Because a program does not spread rapidly does not mean it is not a good program. The quality of a program should not be measured by extent of use. There are some excellent programs in the United States that are not widely used for a variety of reasons. Analyses of existing programs indicate it usually takes three to five years to develop and refine most good science programs. Diffusion and effective implementation take much longer.

Generalization 6

Teachers of science should have sufficient science background to understand what they are teaching and should enjoy teaching science. Many countries including the United States, are concerned about the quality of the science programs in the schools and the ability of the teachers to teach science. While progress is being made to improve the quality of the science teachers, more work continues to be needed. The preparation of elementary school teachers should require more science and mathematics. The use of science specialists in elementary schools has been an effective instructional plan and could be used on a wider basis. These people generally have more preparation in science, have more positive attitudes toward science, and are more willing to spend time preparing materials. In many elementary schools such specialists work with the regular classroom teacher to assist them and to provide content and instructional support.

Summary

These generalizations are based on analyses of American programs. Our observations of science education programs in many other countries indicate many will also apply to other countries. Successful basic education programs do not just happen. They must be planned, developed, and nurtured.

The Status of Basic Education: England and Wales

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Structure

Basic education in England and Wales is a complex system that offers universal, free, and compulsory education to children from the ages of five to 16, with the possibility of continuing until just after the age of 18. The starting age is preceded by a period of voluntary and permissive nursery education and the leaving age is followed by opportunities for further and higher education in colleges, institutes, and polytechnics or by what is normally seen in most countries as university education.

Throughout the years, developments have been constantly taking place, sometimes accelerated by political change and always affected by national economic capacity. Some of these changes have been statutorily confirmed by acts of parliament and others have grown up in the general condition that professional freedom affords.

Some 95% of all children attend schools maintained by local education authorities. In the main these authorities offer a primary system of education from five to 11 years and a secondary school system from 11 to 16 years, or beyond. In some authorities there is a three-tier system of first, middle and high schools.

Five percent of the nation's children attend schools in another system, commonly styled the public school system. From about five to 13, these pupils attend preparatory schools (or preps) and public

schools from 13+ to 18 or so. All these public schools, some other independent schools and preparatory schools charge fees; many schools in the public school system are boarding schools.

Funding of Education

Local education authorities receive their funds to run their education provision from two sources. The first is a very British type of local tax based on property and called rates; in no sense is this a poll tax. In other words a house is liable to pay the same rates whether there are ten residents in it or only one and whether there are children attending school or not. The second source of local authority revenue for education is by a grant from the Treasury; this amounts to around 62% of the total costs of education. Of all the services provided by a local authority, education is by far the most expensive.

Administration

Members of a local education authority are members of a local authority elected every four years by universal adult suffrage. Increasingly, local elections are fought on political lines. Membership of an education committee is much sought after by elected councillors. The local education authority employs a full-time staff of skilled administrators, organizers and inspectors who are non-political.

The nation's educational affairs are in the charge of the Secretary of State for Education and Science, who sits in the inner cabinet of Ministers of the Crown. He is supported by two junior ministers, not in the Cabinet, with special responsibilities for spheres of educational provision, e.g. university and further education. The ministers are answerable to Parliament. They have access to, but do not direct, a staff of around 500 inspectors, called Her Majesty's Inspectors (HMIs) because thet hold their authority by warrant from the Queen and not from a Minister.

Curriculum

There is continuing controversy about the curriculum in all schools. In England the actual content of the curriculum and the mode of interpreting it by timetabling the activities of pupils is vested in the headteacher or principal of the school. There are obvious constraints upon his/her freedom of choice: the interests and qualifications of his teaching staff, the local setting of the school, the demands of public examination boards for which pupils are prepared, the general resources available, advice showered upon him by the

local education authority and its officers and by HMIs. Nevertheless, the head remains in charge of the curriculum. Much of the present discussion relates to the connection between school and society; local, national and international, and that between school and work. Where in the past there have been distinct curricular provisions for boys and girls, these have been challenged and more approaches to engineering and workshop procedures have been offered to girls; in a similar mode of change boys have been encouraged to examine and participate in more completely domestic courses.

Increasingly, some further rationalization is being sought in the provision of facilities in the education of young men and young women from 16 to 19. Separate institutions, called Sixth Form Colleges, have been created in some areas to provide common educational opportunities for all pupils who have completed their secondary school attendance at 16+ but who wish to continue their education. For this continued, full-time education no academic barrier is raised for admission. Some of these Sixth Form Colleges have had remarkable successes not simply with university and polytechnic admissions but also with some students who were not responding to the challenge of the schools they had been attending until the age of 16+.

Inservice Teacher Education

Before the onset of the present economic doldrums, i.e. during the deceptive and comparative economic stability, a serious effort was made to introduce and develop a regular system of inservice education for teachers. (This has been much associated with the name of the Chairman of an Advisory Committee, Lod James, who addressed the ICET Assembly in London in 1972). This provision of inservice education was part of an entirely optional and voluntary system. Universities, learned and subject societies, teachers' associations and other bodies have provided qualifications, in most cases, and courses leading to them. They continue to do so. The present recession, however, has made it very difficult to employ local authorities to support as many teachers as formerly on full salary while engaged in such full-time further study.

Many part-time courses continue to be held in evenings and during school vacations. They offer a variety of approaches to qualifications and teachers appear keen enough to pursue study of this kind. An increasing volume of this kind of course is now directed at principals of schools and at aspirants to principalships. As so much of the responsibility for curriculum development rests with head teachers, courses of this kind both directly and indirectly lead to further curric-

ular growth and development. Even discussions in moments of relaxation may be enough to plant the seed of change.

Among providers of such facilities are many local authorities, employers of teachers, teachers unions, and associations. This voluntary participation in inservice education has also led to in-school inservice education; the staff of a single school now more regularly than formerly attempts to study its own specific problems on a school-based course.

Voluntary subject associations of teachers and others and bodies like the Parliamentary Group For World Government or One World Trust have devised new curricular approaches to community relations, citizenship, school and work, etc. In our multi-racial society and in the relatively permissive system of education which our professional development has induced, it has always been possible to encourage or persuade a colleague in an appropriate school to produce quite legitimately a modified syllabus of study along experimental lines. This was possible but not so frequently attempted in connection with the General Certificate of Education examinations, conducted by university boards. In other boards, especially those for the Certificate of Secondary Education, which are regionally arranged, it has proved easier to amend syllabuses and even modes of examination.

Institutional Innovations in Education

Potentially important in the emergence of the concept of basic education in our English system is the work of the National Foundation for Educational Research. This internationally recognized body was created by the combined efforts of teachers unions, the local education authorities' bodies, and the then Ministry of Education, with strong support from certain universities. Its work is well known and is not confined to the production of test-materials.

In a similar way there developed the Schools Council for Curriculum and Examinations. This was a similarly conceived body and has many valuable publications on curricular development to its credit. It has evolved a modus operandi with a publisher and has, in particular, built a system of ongoing evaluation into all of its activities.

Ministerial departments involved in education, employment, industrial development, transport, and communications have had to examine in detail the problems raised by the transition from school to work. In a society that currently has unemployed doctors, teachers, and skilled engineers, it is most important to prevent the transition for a 16 year-old from school to unemployment. Government ministries have established the Manpower Services Commission doing its

utmost to bridge the gap between school and work: a great impotance is attached to a Youth Opportunity Program but the present recession appears to be testing both the imagination of school and industry and our central economic support.

Technology Transfer

Particularly significant in our years of depression is the growth of the transfer of teachers to industry to enable them to get first-hand experiences to take back into the schools and so persuade the school leavers, boys and girls, highly academic as well as mere plodders, that a lifetime in industry is not a dull prospect. Some local authorities have already taken the initiative in this and the Manpower Services Commission is anxious to persuade more teachers and authorities to take part. The College of Preceptors offers the possibility of a professional award for this kind of industrial attachment.

The Open University

For a decade or so we have had in the U.K. the services of The Open University. The O.U. has demonstrated the value of a credit system in inservice education for teachers and has raised the study of education to a valuable level alongside other university disciplines. A vastly disproportionate number of teachers enrolled in the earlier years for courses leading to degrees of this University. Moreover, it opened doors to those who simply behaved as voyeurs by watching the O.U. television programs. It spread its influence far beyond the teaching profession and has proved itself an inspiration to men and women of ability and high skills who apparently have been neglected in the ordinary course and social setting of education.

Television programs on open broadcast as well as those openly transmitted for O.U. have contributed immensely to the understanding of science in the modern world. This informal facility must be mentioned as an agent for basic education. Its immediacy and the penetrating skill of the color-camera operator offer in this century facilities highly educational in character.

This is the age of the computer, of robotics, of electronics and of the micro-chip. In our deep depression the Government deserves praise for its efforts to assure that every secondary school will have access to and use computer technology.

Conclusion

At the end of the Twentieth Century, mankind is poised for many

varied developments. Some of his basic education—seen professionally—must not include what has to be unlearned before he can step forward; his basic education should rest on the projected level of technological achievement which will serve and develop his mature years. In our English system parents have already combined, in some cases long before government or ministerial provision, to make available the whole flood of electronic gadgetry which is gradually seeping into their everyday lives.

The Development of Basic Education: Kenya

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Defining Primary Education in Kenya

Following the general constituency elections in October, 1979, the President of the Republic of Kenya, in the process of establishing the structure of the next government of Kenya, set up two Ministries of Basic and Higher Education. He defined the functions of the Ministry of Basic Education as: primary and pre-primary education programs; primary curriculum development; primary school inspection, examinations, equipment scheme, and teacher training; special education; Kenya Institute of Education; and Teachers Service Commission.

In the case of the primary education programs, the Ministry of Basic Education was further directed to plan for the introduction of a nine-year basic education program for the entire Republic.

The need to prolong the current seven-year primary education cycle by an additional two years was first realized when, by 1970, a large number of new institutions called village polytechnics had appeared on the educational scene in Kenya through the efforts and direction of the National Christian Council of Kenya. By 1972, the development and usefulness of these village polytechnics as providing a second chance to the large and growing numbers of primary school-leavers who, for one reason or another, cannot continue through secondary education upwards, had attracted the attention of many

local educationists and some external donors, notably the International Labor Organization (ILO).

At the request and invitation of the Kenya Government in that year, ILO studied Kenya's education system with particular reference to the employability of school-leavers, especially at the primary school level. Its report concluded, among other things, that primary seven-leavers, having entered standard one at the mandatory age of six years, were physically too young and academically under-equipped for the labor market. It recommended that the duration of the primary education cycle in Kenya should be nine years and that its content should be sufficiently diversified so as to include a variety of such practical subject areas as described below. This would enable primary school-leavers to come out when they are a bit older and more fully-equipped academically than at present. They would also have attained the current legal employment age of 16 years.

New Educational Objectives

The Kenya Government accepted this report in 1973 and two years later, set up a National Committee on Education Objectives and Policies to re-define Kenya's educational objectives, recommend policies, and to formulate a feasible program of action designed to achieve the recommended policies and objectives within the financial constraints that faced the Government at the time, namely that public recurrent expenditure on education should not grow at a faster rate than the Government's recurrrent budget. The Committee was further required to stress, among other things, the need to relate education to the employment opportunities in a growing economy such as that of Kenya and, in doing so, to lay emphasis on the requirements of rural development, since about 90 percent of Kenya's population lies in rural areas.

The Gachathi Report Findings

The report of the Committee, popularly known as the Gachathi Report, was published in December, 1976. One of the Report's most important recommendations concerns the development of a nine-year basic program in Kenya open to all Kenya children. In the process of doing this, the report gives a timetable for implementing this proposal during the 1980's. This timetable forms an initial framework from which such a nine-year education program can be drawn.

At the time of the Report, and in an effort to enhance accessibility to educational opportunities in the country, the Kenya Government

had abolished the payment of fees for all children in Primary 1 through Primary 4 throughout the Republic. As a further measure in this direction, the report suggested that Kenya should accelerate the achievement of universal seven-year primary education throughout the country by progressively abolishing the payment of fees by children in the remaining primary 5, 6, 7 classes. By December, 1979, this had been done throughout the Republic, thereby paving the way for all Kenyan children to attend primary schools without this financial limitation, and without being forced to go to school. This has caused a sharp rise in primary school enrollments which now stand at 4.2 million children when compared with a forecast enrollment figure of 3.4 million.

After achieving and maintaining a universal seven-year primary education program, and after raising its quality through the provision of trained teachers and suitable instructional materials, the Report recommends that the duration of the universal basic education should be lengthened from the present seven to nine years by establishing junior secondary I and II classes to absorb all the children leaving primary seven. This means that the certificate of primary education examination in its present form should be abolished and replaced by a different examination at the level of junior secondary II. It also means that, when the proposed nine-year basic education program is achieved, the duration of the present six-year secondary education program may have to be reduced by two years, with subsequent changes in the entry and other requirements for university education.

At a recent regional seminar on "Universal Primary Education in Commonwealth Africa", sponsored by the Commonwealth Secretariat and held in Maseru, Lesotho, in February, 1980, the Kenyan delegation reported that its present seven-year primary education cycle is free and voluntary, meaning that it is available to children aged six-13 years and that all the present 11,000 primary schools at the moment hold some 4.2 million children. This figure showed that out of all the school-age children, Kenya has attained more than 97% level of enrollment, and that this percentage placed it second to Mauritius, whose figure was reported to be 98.5%. The Seychelles, Nigeria, and Lesotho came next with figures of 95%, 86% and 85% respectively.

Proposed Nine-Year Basic Education Program

In spite of the 97% enrollment target achieved by the current seven-year primary education program, one of the issues facing planners of the proposed nine-year basic education program in Kenya is

that of defining its scope and content. The Gachathi Report saw basic education as including the additional junior secondary I and II. This means that the nine-year education program could be run at primary schools which continue to increase in number, to expand in size, and to diversify their curricular program. In terms of this last point, the Gachathi Report saw basic education from the point of primary schools providing a diversity of adaptive skills in such basic fields as agriculture, carpentry, home science, fishing, health and nutrition, pottery, basketry, forestry, elementary mechanics and typewriting. The Report proposed that these basic and adaptive skills should be provided not only in formal primary schools alone, but also in non-formal and informal educational programs and activities in schools and out-of-school.

Need for More Teachers and Funds

Two other major difficulties have persisted as real obstacles. One of them is the provision of trained teachers even for the greatly expanded seven-year primary education cycle. Currently this cycle employs no less than 109,000 teachers, 41,000 of whom are untrained persons. Extensive in-service as well as pre-service teacher education programs are being formulated and implemented from time to time, not only in the interest of high quality basic education, but also as a means of phasing out the untrained teachers from the teaching force.

The second real obstacle in the process of achieving universal primary education is the general shortage of finances at the hands of the central government. Already, over 29% of the government total recurrent expenditure goes to education. Is it possible or even realistic for the government to incrase this percentage at the expense of other equally important services?

Fortunately for Kenya, however, this financial constraint had already been recognized by the government at the time of establishing the Gachathi Committee in 1974. If the problem was acute then, it has become even more so today, due to worsening global economic and monetary circumstances. Prices of oil and related oil products are escalating every day, inflation is hitting every nation, and trade between nations is protracted.

Popular Support

Given this gloomy internal and global economic and monetary picture, how has Kenya managed to survive and to reach the high level of enrollment in primary schools as indicated above? The answer lies in the great enthusiasm of the Kenyan people to send children to

school and in the national moto of *Harambee* which has helped communities unite their efforts to build their nation. Through Harambee meetings and activities, communities all over the Republic have given considerable financial and material support to the educational development of the country. At one of the Harambee meetings where His Excellency the President, Daniel T. arap Moi, C.G.H., M.P. was the guest of honor, eleven million Kenya shillings was collected for the development of education in 168 primary schools in that particular district.

Further, in those areas where rapid development has been hampered, especially by environmental factors, the Kenya Government had decided as far back as 1974 to remove the payment of tuition fees by all primary school children in order to encourage as many as possible of the school-age children in these areas to attend schools. In pursuance of this policy, the government decided further that it would provide boarding primary schools in these areas in an effort to assist the children of nomadic parents who wish to attend school while their parents travel to distant places in search of water for themselves and their livestock. These 13 arid zone centers, as they are called, are under construction through an education loan from one of the affiliates of the World Bank. It is in these areas that the greatest challenge lies for Kenyan planners of basic education.

Conclusion

For a nine-year basic education program to be successful, concerted efforts are required. The need for close cooperation between government ministries on one hand and between the central government and local authorities on the other, cannot be over-emphasized. In Kenya, for example, the Ministry of Culture and Social Services is responsible for youth activities throughout the country. Most of these activities are of direct interest to the Ministry of Basic Education in terms of its in-school and out-of-school program. The Ministry of Basic Education organizes annual music and drama festivals and athletics championships; activities in which the Ministries of Higher Education and Culture and Social Services are equally interested.

Also in Kenya, primary school buildings are designed and constructed by local authorities in accordance with educational and health requirements laid down by the Ministries of Basic and Higher Education and of Health. It is therefore important that there should be maximum cooperation between the central and local governments. Talking about health it is now recognized that healthy and well-fed children have better academic achievement records than do under-

nourished children. Consequently, the Kenya Government has, since 1979, provided milk for all children in primary schools throughout the country, and in remote areas, primary school children are additionally provided with lunch.

It is with these and other related measures that the Kenya Government plans to establish a nine-year basic education program for Kenyan children of school age.

Basic Education Issues and Policies: Brazil

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Introduction

The concept of basic education is generally associated with the satisfaction of basic needs and with the certainty that an educational minimum will be granted to all members of society. Usually such a concept is also associated with a meaningful reduction of social and economical differences and of extreme poverty.

Basic education encompasses formal and non-formal education at the elementary and early secondary level, intended to afford members of a social group economic and civic qualification and the development of personality. It is also intended to prepare people for the satisfactory exercise of social and political responsibility. (Ministry of Education and Culture, 1982 Program Directions).

By such a concept it is understood that basic education is not attained by merely adding up pre-school, elementary and the first grades of the secondary school. Basic education includes, as previously mentioned, formal and non-formal (in and out of the school system) educational actions referring to health, nutrition and work. Furthermore basic education aims for:

1. positive attitudes toward social cooperation, human solidarity, regional and national culture;
2. functional alphabetization and fundamental mathematics;

3. correct (scientific) focus on health, agriculture, and productive activities in general; and,
4. basic knowledge of social life and citizenship.

Programs have been designed and strategies interwoven with government and private institutions in order to attain these goals.

Basic Education and Educational Politics

Brazil has long recognized the meaning of basic education for the developing countries and has, in the last years, presented specific directions for action in this field.

In such a country as Brazil with 120 million inhabitants, 45% of whom are under 20 years of age, it is not easy to fulfill educational demands. Furthermore, Brazilian territory comprises 8.5 million square kilometers, with strongly marked regional differences. These differences range from geographical (physical) characteristics to cultural aspects (European influence through immigration in the South, for instance).

In this context, the need for basic education is evident and private and government institutions have given it plenty of attention. In the '50s the Catholic Church began the Basic Education Movement (Movimento de Educacao de Base) and in the last decade the Ministry of Education has shown genuine concern for basic education. The Brazilian Government has encouraged the collaboration between educational institutions and international agencies such as UNESCO, the Interamerican bank (Banco Interamericano para o Desenvolvimento) and the World Bank (Banco Mundial).

Besides consciousness of the importance of the problem by the Brazilian Ministry of Education, there has been all over the world an increasing concern with human development issues and educational policies.

So, Brazil has benefited from different sources. On one side the Government is eager to grant basic education for the largest possible number; on the other side, international agencies are developing similar policies.

The World Bank, in allocating more funds for primary and non-formal education, for technical education at the secondary level, and for project-related training, has laid down five principles to guide Bank lending:

1. basic education should be provided for all children and adults as soon as the available resources and conditions permit;

2. efforts should be made to provide educational opportunities without distinction as to sex, ethnic background, or social and economic status;
3. education systems should try to improve the flow of students through different grades with a minimum of waste, and also improve the quality of education;
4. education should be related to work and the environment of the student; and,
5. to satisfy these objectives, developing countries will need to build and maintain institutional capacities for managing education systems.

Projects and Programs—Effectiveness

Among basic education projects and programs already developed, we can select as examples the actions taken by the Catholic Church, the Ministry of Education (through special programs), and the World Bank.

As mentioned before, the Catholic Church began in the 50's to develop basic education projects. Such policy unfortunately led to some conflicts with the government. Many factors interfered in the movement, leading to political manipulation and a deep crisis involving the Church, the government, and landowners.

The Ministry of Education has initiated two projects; the MOBRAL (Movimento Brasileiro de Alfabetizacao), which as a foundation has a considerable degree of automony, and the PRODASEC (Programa de Acoes Socio-Educativas e Culturais) for rural and urban areas.

The first—MOBRAL—was created in 1967 to cope with the challenge of illiteracy and adult education. Now it concentrates on basic education, especially in developing community resources semi-professional training.

The PRODASEC is a Ministry-designed program. It is conducted in cooperation with other federal and state government agencies and is planned for five years (1980-1985).

The goal is similar to that of MOBRAL, to prepare children, youths, and adults for productive lives and citizenship. It deals mainly with the migratory currents that have been constant in Brazil. Special emphasis has been given to the urban sector for, in the last years, there has been a progressive flow of people to the big cities, which are growing at unprecedent levels, thus demanding a large number of workers. Notwithstanding, this does not solve the problem, because a high percentage of those who leave the rural areas are totally unpre-

pared for urban life. They are professionally unqualified and cannot cope with the challenges of the big city. This framework underscores the importance of PRODASEC and how deeply is the Ministry of Education interested in it.

The World Bank has worldwide projects in developing countries, one example of which is the project in rural Brazil. The estimated increase in annual farm output due to the extension of elementary education from one to four years reached 22.1%. (The lowest increase has been 4%). From the U.S. investment of 32 million dollars, about 800,000 students and 23,000 teachers living in rural areas in nine northeastern states will benefit from the construction of classrooms, tesxtbooks, teacher-training, a pilot school-meal program, and curricula development. Total cost: 91.4 million.

Conclusion

There are many other issues surrounding basic education that still need to be addressed, for example:

1. will basic "versus" higher education become an educational dilemma for developing countries who cannot afford both;
2. which is a better instrument for individual freedom and the development of society: basic education or research; and,
3. will basic education be the right weapon to fight cultural colonialism.

These are the topics to be discussed and resolved before setting forth educational policies for the developing countries.

Science and Basic Education: Trinidad

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Introduction

The change from elitist systems to those which provide educational opportunities for most, if not all, of the educable of school age represents the ideals of development strategies common to all developing nations who ground their hopes and aspirations in the process of formal education as the chief means for the development of their human resources. Trinidad and Tobago is one such nation. Science as a part of of the basic education in Trinidad and Tobago is a recent development in the education system. Its status has been changed from being an exclusive subject for selected students, to that of compulsory subject for all students.

Overview

Historical/Geographical

The twin island state of Trinidad and Tobago is the southern-most of the Caribbean Territories. The islands, formerly separate colonies of Britain, were administered as one territory from 1899. Political independence was gained in 1962, and in 1976 the country assumed republican status. The current population estimate is 1.1 million; comprised of a variety of ethnic groups and religious persuasions.

The Education System

The election of a national government in 1956 marked the beginning of Trinidad and Tobago's most recent thrust in education. The declared commitment to equality of educational opportunity, and the declared faith in education as one of the key agents in the processes of decolonization and development, led to the expansion of the education system, with projections to offer at the earliest possible date universal secondary education for all the nation's children. In 1981, 250,000 secondary school places will be available. Planning in the fifties and sixties was hampered by the lack of funds. Developments in the world oil situation, however, facilitated the acceleration of the expansion process.

In 1976, 13.3% of the national budget was allocated to education. The projected expenditure for 1981 is TT$300 million with new projects to begin in the primary and teacher education sectors.

The sector of the education system which has experienced the highest degree of expansion to date, is the secondary sector. Almost from the inception of an organized system of education in 1851, there was a policy of universal primary education. There are some 700 primary schools that accommodate the nation's five to 11 year olds. After seven years at primary school, transition to the secondary level is done on the basis of performance at the 11+ or common entrance examinations.

At the secondary level, two school systems exist: the traditional five to seven year schools and the new junior secondary and senior secondary/comprehensive schools. The traditional secondary schools are the most sought after, and so, because of the system of free choice, these schools tend to have populations of high scorers on the common entrance examinations. They offer the range of subjects classified as classical or academic. A few offer business studies; commerce, accounts, and some offer secretarial subjects; typing, shorthand, and office management.

The new junior secondary schools have come to be characterized by populations of low common entrance examination scorers. The curriculum of the junior secondary school includes the academic subjects as well as craft; home economics and industrial arts. There are no options. These schools operate on a double shift, each shift accomodates 960 students.

After three years at the junior secondary level, students in the junior secondary schools are transferred to senior secondary/comprehensive schools for a further two years. At the end of this time, they sit external examinations—the Cambridge General Certificate of Edu-

cation, ordinary level; and/or the Caribbean Examinations Council examinations, general/basic proficiency level; or the National Examinations for the technical/vocational and craft areas. The curriculum of the senior level schools is comprehensive, and includes the academic subjects as well as a wide range of technical/vocational and craft subjects. Students are chanelled into options on the basis of performance on the 14+ examination at the end of the third year in junior secondary school. Senior comprehensive schools are single shift, with average enrollments of 1,200 students.

Developments in Science Education

Policy

The strategy for national development envisioned a society transformed from an economic base dependent on agriculture (mainly sugar cane) and on petroleum refining, to one rooted in a diversity of energy-based and other related industries. Education would provide the necessary manpower, technicians craftsmen and professionals, as well as the skills necessary for coping with life in a modern technology-based industrialized society. The Draft Plan for Educational Development summarizes the purpose of education in Trinidad and Tobago in the following way:

> We are supposed to be producing citizens who are intellectually, morally, and emotionally fitted to respond adequately and productively to the varied challenges of life in a multi-racial developing country and to the changes which are being brought about rapidly in the economic foundation particularly the challenges of science and technology.

The significance of science as part of general education was summarized by the late Prime Minister, when he made the observation that any country moving towards heavy industrial development required the following personnel: 10-15% professionals; 15-20% subprofessionals and technicians; 60-70% persons with general training but with definite exposure to the sciences and industrial processes; and 10-15% skilled craftsmen.

This was the basis of the policy of provision for five years postprimary schooling for all pupils, with the aim of producing general industrial graduates.

New Focus on Curriculum, Teachers and Equipment

Science consequently assumed prominence in the school curriculum as a basic component of general education. Whereas it traditionally had a low level of importance in curriculum policy, it became the focus of curriculum development thrusts. Whereas, in the traditional system it was exclusively the domain of the "bright" student (and still is in the traditional schools) as general science it is now compulsory for all junior secondary students. At the senior comprehensive level, all students do some form of science. The technical/vocational streams do applied science; the craft streams do related science and the academic streams do the traditional sciences.

In order to meet the demands of the new status accorded to science in the school curriculum, three critical areas needed to be addressed. These were: the science curriculum; the teachers; and physical facilities in schools, particularly at the primary level.

Primary Level New Science Curriculum

Prior to 1975, science in the primary school was taught as nature study and hygiene in accordance with the 1966 syllabus. A new general science syllabus was introduced in 1975, but most teachers revealed the following as factors which were contributing to this state of affairs:

1. most teachers had negative attitudes towards the teaching of science;
2. most teachers felt they did not have adequate space and equipment to teach science; and
3. few teachers felt confident to teach science.

Following this survey, a joint research project between the Ministry of Education and the School of Education, University of the West Indies, was undertaken. This involved the identification of cognitive development levels of primary school children between the ages of five-12. The findings of this project revealed a marked reduction in the progress in cognitive development in the age group nine-12. On the basis of these findings, a science curriculum package was designed with the aim of providing activities and situations which would challenge children's thinking ability to promote more rapid progress of cognitive development. This curriculum, Science: A Process Approach for Trinidad and Tobago (SAPATT), marks a first effort at systematic development of a science curriculum for the primary level. It adopts

the process approach. The expressed aim of the program is to provide children in the primary school with some highly generalizable intellectual skills, and some knowledge of scientific procedures for gaining new knowledge which can serve as a spring-board for later study of any of the sciences.

Curriculum

The organization for aquisition of science process skills is as follows:

1. Infants (Level I, ages five to six); observing, using space and using time relationships, using numbers, measuring, classifying, and communicating.
2. Juniors (Level II, ages seven to nine); processes 1-6 become more complex. In addition the following new processes are attempted; predicting, and inferring.
3. Seniors (Level III, ages ten to 12); the more complex integrated processes of scientific activity are attempted; formulating hypotheses, controlling variables, interpreting data, defining operationally, and experimenting.

Science: A Process Approach for Trinidad and Tobago (SAPATT) is being developed in phases by the primary level teachers in workshops under the guidance of personnel from the Ministry of Education and the School of Education, (University of the West Indies). The phases correspond with the different year groups within the primary school, e.g. phase one, five to six year-olds. Twenty-five schools are being monitored as pilot schools for the purpose of evaluating the program. These 25 schools were randomly selected and all types of schools are represented in this group; rural, urban, large populations, small populations, single sex, mixed, denominational, and government.

Teachers

Workshops are organized in each of the eight educational districts. The participants in these workshops are the 25 teachers of the particular classes from the 25 pilot schools and 25 others drawn from schools in the particular district. The organizing elements of the workshops are as follows: introduction to the principles of curriculum development; increasing science teaching skills; designing of science learning activities and production of resource materials; and the revision of science learning activities based on feedback from trials in

schools. The collection of revised learning activities produced at the workshops are edited and compiled into teachers guides. The production of student texts and workbooks will form part of a later stage of the project.

The policy of having classroom teachers design and test activities they are required to teach has gone a long way in eliminating the negative attitudes to science and science teaching among those teachers who partipate in the workshops. Those teachers who were not part of the production team, however, still express lack of confidence in their ability to teach the science activities prescribed in the teachers' guides. Because of this, as the phases progress, efforts are being made to involve as many teachers as possible in dissemination workshops. At these workshops, participants in the production workshops demonstrate their activities and display their students' work. Video recordings of science classes taught by teachers in the pilot schools are also shown as part of the process of introducing teachers to the new program. The original plan to have all classroom teachers involved in the production workshops had to be abandoned because of the costs invloved.

The utilization of teachers as producers of the activities in the teachers guides also performs the short-term function of preparing practicing teachers for teaching the new program, and thus in part addresses the teacher problem. At the same time the program at the teachers' colleges has been modified to introduce teachers in training to the new program and to help them acquire the skills necessary for teaching it. The teacher educators are kept informed of the progress of the program in special workshops.

Development of SAPATT is almost complete. Implementation of each tested phase is immediate, so that at present all five to eight year olds are doing science at the primary schools. This age range corresponds to the three completed phases—Level one year one; level one year two, and level two year one. The two subsequent stages are still in press. As a further development, the Common Entrance Examination of 1982 will for the first time include science items. Workshops for teachers of the Common Entrance classes were conducted during the 1980/81 school year and will continue during the coming year. These workshops follow the same procedure as for the other phases.

Physical Facilities

Perhaps the most pressing of the three critical areas, and the one requiring the greatest capital expenditure, is that of the provision of adequate facilities for teaching the new science program. Conditions

in a significant number of primary schools in Trinidad and Tobago at present place severe limitations on the effective teaching of science, in particular the factors of cramped space and unsuitably designed furniture. The new project at the primary level referred to earlier in this paper, is the plan for the renovation and repair of primary schools, which is due to come on stream during the 1981/82 school year. Primary schools, under this plan, will have specially equipped science rooms, as well as separate classrooms.

Junior Secondary Level

The situation with science education at the junior secondary level is not as clear-cut as that at the primary level, mainly because the system is not as cohesive. Only the new junior secondary schools have mandatory syllabuses and there is virtually no control over the programs at the traditional schools. In addition, the teacher education sector for the secondary level is not as entrenched in the system as that for the primary level.

The first set of junior secondary schools began operating in the 1972/73 school year. With their introduction came the policy of compulsory science education for the first three years of secondary school. It was also the first time that an organized curriculum in science for this level was in operation.

Curriculum

Work on the development of a science curriculum for the junior secondary level (12-14+ age group) began in 1968. The curriculum—now known as the West Indian Science Curriculum Innovation Project or WISCIP—was developed in such a way as to show teachers not only what to teach, but how to teach it. This procedure was adopted on the basis of the observation that it was usually the inexperienced teachers who were assigned the lower forms. The curriculum in the form of teachers' guides, prescribes lesson-by-lesson detail, which includes teaching technique, apparatus, experimental technique, homework activities and evaluation. The program was piloted in 24 of the five-year secondary schools. It is a general science program with a fair degree of integration in the first two years, and a separation into biology, chemistry and physics in the third year. This was meant to facilitate the transition to the Cambridge General Certificate Examination Syllabuses in the separate science in the fourth year. The aim of the WISCIP is to promote scientific awareness and to develop positive attitude to life, health, and the environment. It is activity oriented, with equal emphasis being placed on the acquisition of

science process skills and scientific information. It consists of 15 units, that reflect the basic unifying concepts of life, matter and energy. A detailed revision of this program has been proposed, to include considerations of: the current concept of integration; information on the cognitive development of West Indian children; social aspects of science; and technological developments in the Trinidad and Tobago society.

At the junior secondary level the teaching of WISCIP is now confined almost exclusively to the new junior secondary schools, where it is mandatory. Teachers in the five/seven year school devise their own programs. There is no coordination of these programs. On the whole, supervision of the teaching of science at this level is hampered by the lack of personnel which the present structure provides. There are two curriculum supervisors to coordinate the teaching of science at all levels in the system. Moves are afoot to establish a department of curriculum with an increased corps of supervisors.

The press for the revision of the WISCIP program has arisen from the increasing number of teachers who express concern over its apparent unsuitability for the junior secondary school student. The intention was to prescribe activities for mixed ability classes. However, a combination of two factors; the policy for assigning students to junior secondary school; and, the abandoning of the project at the testing phase—has resulted in a program which is pitched at a cognitive level higher than that of the students to whom it is being taught. In addition, the highly prescriptive nature of the teachers guides leads teachers to infer that they should not deviate from what these guides outline.

Teachers

Teachers represent the most pressing of the three critical areas at the junior secondary level. The issue of the teachers is intricately tied in with the policy for recruiting teachers for the secondary level, and with the embryonic status of teacher education for the secondary level. Originally, the junior secondary schools were staffed with experienced teachers from the primary level. The science teachers were introduced to the WISCIP program in special training sessions. This policy has been changed, so that science teachers who are now being assigned to junior secondary schools are those who would qualify to teach science in the traditional secondary schools. A first degree in science or a GCE pass at advanced level in at least one of the science subjects qualifies for teaching at the secondary level.

Prior to 1973, there was no provision for teacher education for the

secondary level. A post-graduate, in-service program, funded by the government of Trinidad and Tobago, was instituted by the University of the West Indies, in 1973. Teacher education for this level is being further developed to include an undergraduate four-year degree with education program possession of which, it is anticipated, would be made a requirement for teaching at the secondary level. In addition, the in-service program is to be expanded, and courses at the masters and certificate levels are to be offered. Phasing in of the new programs is expected to begin in the 1982/83 school year.

Physical Facilities

For the junior secondary level on the whole, the issue of physical facilities is not as critical as it is for the primary level. The junior secondary schools have been designed in keeping with current trends—spacious laboratories, flexible furniture, storage and preparation rooms. The traditional schools have varying physical conditions. All of these schools have at least two laboratories, but because these schools also accomodate fourth and fifth forms (some have sixth forms also) the junior forms have limited access to the laboratories. This places severe constraints on the kind of hands-on experiences teachers can offer students. This particular problem is a policy issue in that its solution is rooted in the unresolved question to have or not to have two parallel school systems at the secondary level.

Summary

Trinidad and Tobago has made efforts to introduce science as part of basic education within the context of a strategy for development. Three areas were identified as being critical to efforts in this sphere; namely, the science curriculum, the teachers, and physical conditions, particularly in the primary schools.

The issues of the curriculum and the teachers as they relate to the primary level are being addressed simultaneously by involving practicing classroom teachers in the curriculum development process, and by making the program at the teachers colleges consistent with the perspectives of the new curriculum. The issue of physical conditions is being addressed in the plan for the renovation and repair of primary schools.

Efforts at the junior secondary level are thwarted by the general policy for the recruitment of teachers for the secondary level, and by the incohesiveness of the system at this level. As was noted, this is the sector that has undergone the greatest degree of expansion, with

highest priority being given to the provision of places. Projections reveal that increasing priority will now be given to the curriculum and the teachers.

New Educational Priorities: Tanzania

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The Status of Education in Tanzania

At Tanzanian independence in 1961, the priority was for trained manpower to fill gaps left by the exodus of British civil servants and for economic development. Whereas the percentage of Africans holding positions of high responsibility was 33% in 1961, this had risen to 94% by 1975.

In the late 1960's, primary education was made a priority, following the Arusha Declaration of 1967 and the pronouncement on education for self-reliance. Figures speak for themselves. One-half million children were in primary schools in 1961, increasing to three and one-half million students during the 1978/79 school year.

In the early 1970's, the priority was placed on adult education, whose emphasis was on functional literacy. It was agreed that a literate work force would speed up economic development at a faster rate than development based on the formal system, which takes many years to produce skilled manpower. It is estimated that whereas the 1970 ratio of illiteracy was 75%, this had dropped to 39% by 1975. In August 1981, over three and one-half million adult students will be taking tests to establish their degree of literacy.

Universal Primary Education

In the mid 1970's and early 1980's, the priority shifted to universal primary education. This followed the successful mobilization of the people into planned village communities. By 1980, over 90% of school-age children were in the first grade.

It is also useful to note that, in Tanzania, priorities in education have had to be related to national priorities. For example, according to the long-term plan (1981-2000), 60% of the GNP (gross national product) will be contributed by the public sector. During this period, emphasis will be placed on industrialization and mining while additional efforts will be made in the transfer of technology to the people. Educational implications will inevitably mean more vocational training, science, and technical subjects, and more institutions (three more universities, 20 technical colleges, and over 100 vocational training centers).

Educational Innovation

Tanzania has tried alternative methods of providing education. To meet the demand for teachers for universal primary education, training of teachers had to include the distance teaching approach and apprenticeship under experienced primary school teachers. Thirteen thousand were trained this way in 1976, while another group of 18,000 was enrolled in 1978. Each group remained under apprenticeship for three years before being certified as teachers.

Another approach was the monitorial system, through which older pupils in upper classes were required to teach younger pupils in the lower classes. Other strategies include the temporary relaxation on quality of school buildings in order to accomodate the influx of children under the UPE (Universal Primary Education) program.

Admission to the university has also been subjected to a change which requires a minimum of three years break between school and the university. One of the years is spent in national service while the remaining two are spent at a workplace for practical experience.

An example of participation by the people is the universal primary education program. The people helped construct the building and contributed funds. Without this type of participation, the program would not have succeeded as much as it did.

Conclusion

In conclusion, it can be stated quite emphatically that the Tanza-

nian experience has shown the inevitability of change. The questions of direction, form, speed, emphasis, and priorities need to be tackled by not just the the educators but also by parents, leaders of public opinion, the pupils, the experts, and ordinary members of society. No set of priorities should or could be permanent. Machinery must be created to make redirection of a set of priorities possible.

Basic Skills Assessment: United States

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Introduction

Basic skills assessment legislation has been passed by more than 36 state legislatures in the U.S. Although the legislation varies greatly from state to state, it appears to represent the cutting edge of a national movement to redirect state educational priorities. National test results including the Scholastic Aptitude Test are widely used to point out diminshed basic skills on the part of the students. This phenomenon, coupled with the widely-held perception that a secondary school diploma does not represent a standard of academic achievement, has been a significant factor in selling the legislation to state legislators. It is the qualitative factor of education in general and the secondary school diploma in particular that is the focus of the basic skills assessment legislation. Arthur Wise, in a report prepared under the sponsorship of the National Institute of Education, said that the inordinate interest in minimal competency testing suggests that its advocates hope to solve a second and more profound problem, that of the group of students who fail to acquire the basic skills that some teachers fail to teach. He then goes on to state that existing data provides little, if any, justification for the belief that minimal competency testing will help poor students learn or poor teachers teach.

This issue is of particular interest to teacher educators because the legislatures in the states of Florida and South Carolina developed

a comprehensive basic skills legislation that includes teacher education reform and teacher evaluation. Further, this legislation was enacted before test results could be analyzed to determine if a problem existed. It would appear that the legislation was enacted on the hypothesis that the students do not learn the basic skills because teachers do not or cannot teach them. An interesting footnote to this can be found in the paraphrased words of a prominent educator who said several years ago that having spent 25 years researching the characteristics of good teachers, he concluded that good teachers simply work harder than poor teachers.

The problem is a complex one and there is no easy set of answers to it. However, teacher educators need to be aware of the problems and the legislation and to work toward a sound solution.

Assessment of Basic Skills in South Carolina

The Basic Skills Assessment Program for the State of South Carolina was enacted in August 1978, and it established in law the acquisition of minimum performance standards by the public school population as a priority for the public schools. In addition, the act mandated that the public schools provide instruction in the basic skills of mathematics, reading, and writing to those students who demonstrate deficiencies in one or more of these areas. It is interesting to note that the legislation does not cover the private sector.

The South Carolina Act benefited from the 36 other states' acts that preceded it. The legislation was designed as a comprehensive approach toward the improvement of the basic skills of individual students and the effectiveness of instructional programs. A major focus is centered on the primary grades (kindergarten-third) rather than solely on the high school years. Also, it begins with the establishment of state-wide educational objectives in reading, writing, and mathematics for kindergarten-12 grades. Specific testing levels are as follows: grade one—readiness testing at the beginning of the grade; grades two, three, six, and eight—testing at the end of each grade for specific competencies; grade 11—adult functional competency at the end of the grade.

The tests according to the State Department of Education are designed to detect and alleviate student deficiencies through instructional improvement. However, its usefulness as a diagnostic tool for each student is as yet unproven. The process continues and the schools are now to receive the test results and must design remedial programs for those students who did not attain the minimum standards.

Assessment of Basic Skills in Florida

The legislation in Florida reaffirms the priority of Florida's educational system as helping all students acquire and apply the skills necessary to perform basic reading, writing, and mathematics tasks.

The State Assessment Program includes testing at grades three, five, eight, and eleven, done in October, 1977. The 11th grade test includes a test of the application of basic skills to practical situations. Effective with the 1982-83 school year, all students will be required to meet a specific minimum standard on this test in order to qualify for a regular high school diploma.

The State Board of Education first adopted minimum performance standards in 1977. The standards were developed by the Department of Education with wide involvement of local district educators from across the State. The standards have subsequently been revised several times. These revisions have in turn affected the State Assessment Program tests and test items. In accordance with the legislation, local school districts are responsible for preparing all students on the standards which students are expected to pass as a requirement for graduation. The tests administered as part of this program are untimed in order to assure each student that he or she could attempt all items. At the third grade level, the entire test is teacher-paced, with the teacher reading the test directions to the students.

In the development of the various grade level tests, each standard is typically defined by one, two, or three skills. Each skill, in turn, is measured by several test items, normally four or five.

The State Department of Education indicated in the 1980-81 State-wide Assessment Report that the student and school reports are to help the student and the instructional personnel identify individual third, fifth, eighth, and 11th grade students who currently need further assistance in acquiring basic skills, and curricular areas which need modification and revision. An analysis of the test results currently available reveals that student performance has increased in the vast majority of the test areas since the tests were first administered in 1977.

Summary

Basic skills legislation and companion legislation on teacher education are changing the classroom and teacher education. This is taking place without a thorough analysis of test results and is based

largely on the premise that students don't learn because teacher education is failing the people and the institution it is supposed to serve. Further, the entire movement has taken place without significant involvement of educators or teacher educators. It is critical that teacher educators become significantly involved in the movement.

Basic Education in Rural Areas: Bolivia

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Background

Bolivia is a land-locked country of some 1.1 million sq. km. It is of marked variation, characterized by three distinctly different geographical areas: the altiplano, the valleys, and the tropical plain.

The population, totaling some 5.6 million, is composed of several ethnic groups who speak different languages. Aymaras and Spanish descendants predominate in the north and central Altiplano; Quechua in the southern and central part of Bolivia; Indians and several smaller ethnic groups in the Oriente. The density of the population also shows marked contrast, varying from 0.5 inhabitants per sq. km. in the Department of Pando to 15.6 in Cochabamba.

The sociological structure of the Bolivian society, accordingly, shows significant diversification, with the customs of today being deeply rooted in the past. For instance, one finds a strong internal-dependency attitude and an isolationist tendency towards small groups. Traces of the past are also clearly evident in the internal structure; the land tenure and exploitation system, and the cultural behavior.

The typical agricultural way of life of the past, still practiced today, has come to be viewed by the urban population as regressive and consequently has created a wide gap between the two worlds. In

addition, political instability during the recent past made the establishment of a consistent, long-term social development policy almost impossible.

Tradition has also shaped the attitude of the rural communities towards modern education. Many of the altiplano and valley parents believe that the schools deprive the family of labor indispensible at the peak agricultural seasons. This explains the high drop-out rates for rural schools.

Despite the prevailing reticent attitudes towards formal schooling, it is often recognized that such schooling is the sole path to eventual social advancement and improved economic status: knowledge of Spanish, for example, is an indispensible quality for advancement. In such cases, schools are viewed as future-oriented institutions worthy of sacrifices and inconvenience.

Primary Education

In brief, primary education is divided into three cycles as follows: pre-primary or pre-basic, two years; basic, five years; and intermediate, three years. Normal entrance age to the basic cycle, which is considered compulsory, is six. An analysis of the present situation in the light both of past trends and projected policies reveals a number of problems, the most serious among them being the inadequacy of educational services in the rural areas, which handicap the children and prevent their pursuit of even elementary educational aspirations.

Rural education is based on the school-nucleus system, with a one-to-five or one-to-eight grade central school, and several one-to-three grade satellite schools located six to ten km. away from the central school. Distance is certainly not the only reason for desertion; high drop-out rates are also observed in lower rural grades. Apart from the fact that many satellite schools have fewer than three grades, non-adapted curricula, the language problem, malnutrition, use of the children for farm work, and negative attitudes of parents towards the school are other reasons which help explain these high rates.

Primary education is compulsory under the Bolivian Constitution and is defined by law as comprising eight obligatory grades. The objectives of this level are:

1. the development of habits of hygiene;
2. work, study, and good behavior;
3. the stimulation of individual aptitudes, the initiation to practices of self education;

4. the cultivation of patriotism and devotion to work; and,
5. the development of manual skills.

The diagnosis identifies a number of causes for the low performance of Bolivian elementary education, including: structural confusion; administrative instability; deficient infrastructure; insufficient professional training of a large percentage of teachers; absence of technical supervision; and, lack of consistency between plans, programs, and educational objectives. The diagnosis also notes: low interaction between school and community; lack of economic resources on the part of both families and government; low cultural level of the population and prejudicial attitudes rooted in tradition.

The Bolivian rural education system is fraught with problems of a serious nature, including administrative, communication, instructional method, instructional resource, and socio-cultural-economic problems, not the least of which is the multicultural multilingual society which is rural Bolivia.

The National Plan for Education

The Plan includes: attention to the quantitative and qualitative improvement of rural education; administrative reform of the educational system; expansion of intermediate and secondary education; creation of a center for the investigation and evaluation of rural education; diversification of technical education in accordance with national and regional needs; expansion and improvement of educational supervision; investigation of the uses of television and technology for increased cost effectiveness in education; and expansion and improvement of adult education.

A basic objective of the Plan will be to assist the population to obtain the technical and personal skills necessary for their own personal development and necessary for them to contribute to Bolivia's development.

Rural Education Reform

The proposed program for rural education is perhaps the most worthy of further comment.

Under the proposed rural education program, education is to serve as a catalyst for social, economic, and cultural development in rural areas. This is to be accomplished by the creation of integrated school and community centers, built by the community with support from the central government for equipment, supplies, and materials. These centers will focus the attention and support of several minis-

tries on an integrated approach to development. Each center will consist of at least one large school complex which would include pre-primary, primary, and technical secondary school specializations.

These "nuclear" schools would serve the upper grade needs of the area. A variety of smaller rural "feeder" or "satellite" schools might only provide three to five grades because of the low population density in their areas. Social services at the nuclear school would include boarding facilities for those students who must leave home because the nearby feeder school cannot offer further educational opportunities. A variety of solutions may be sought to permit the boarding facility to operate economically.

Family-life education will be suited to regional needs. Since the woman is the very influential decision-maker in campesino society, these programs will assist her to make better decisions regarding family and community life. Health, sanitation, food preparation and child care will be emphasized. Another program for women is that of skill training in arts and crafts. These would help her contribute financially to the family and the community.

Since, basic to all education or learning endeavors, is the maintenance of self-respect and cultural pride, each center will develop a special cultural and folklore service to assure that the people in the region know and understand their heritage and how it relates to the other cultures.

To put ideas learned in the classroom into practice, a series of laboratories would be provided in each center. The industialization of livestock would be another area of emphasis since the production and marketing of animals play an important role in the rural economy. Basic shops are proposed for general mechanics, electricity, carpentry, plumbing, and other relevant skills. Training in the maintenance of agricultural machinery and transportation equipment will be stressed.

Health service at the centers will be integrated with the Ministry of Health programs. It is expected that each center will contain simple medical and pharmacy facilities and will have the equipment necessary to move seriously-ill persons to the nearest appropriate facility for treatment.

So that it may develop in an orderly manner based on continual evaluation and research, an evaluation and improvement unit would be set up in each center.

Finally, in agreement with the Agriculture and Rural Affairs Ministry, the centers would encourage the formation of cooperatives for agricultural production and marketing, for consumption, savings

and loan, and for the commercialization of locally-produced arts and crafts.

The Government seeks realistic ways of reaching the rural population with educational activities designed to make a practical difference in their lives.

Educating A Good Citizen: United Kingdom

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Curricular Influences in U.K. Schools

The reconciliation of needs of individual pupils with those of the state has been a subject of debate among philosophers—including the educational philosophers from Plato to Rousseau and from Dewey to Illich—for many a century. The debate is as poignant now as it has ever been.

In the U.K., the balance of educational thinking and practice for the last half-century has been heavily in favor of meeting the needs of the individual child. Indeed, this philosophy is clearly embodied in the major education act of 1944 in which education authorities are invoked to provide education for all pupils according to "their age, ability and aptitude." This injunction is the only statutory curricular guidance that our political masters have given to the educators except for requiring all schools to incorporate a religious assembly into their day's activity. Not surprisingly, practice varies greatly in the schools and, although a common core of subjects—English, mathematics, geography, history, a little science—seems to have arisen over the years, the curriculum remains flexible and subject to outside pressures and demands. It is about these outside influences that I will speak. The curriculum changes in the U.K. in response to both state and to individual needs. Some would question whether the mode of change is speedy enough to meet the demands of a modern state; some see the

evolutionary approach as a strength in itself and one avoiding cataclysmic error.

By way of example, I shall refer to curriculum work in the vocational, environmental, cultural, moral, health and more recent in appearance, overtly political aspects of education in the belief that these are some of the areas closely connected with developing a good citizen—that is, a school leaver not only employable and law-abiding but understanding, happy, and adaptable to change.

Government Direction

Before fully understanding the nature of curricular influences in U.K. schools, it is important to remember that while our Minister of Education has the right to direct and control the education system and has a small, skilled body of Inspectors to monitor practice, the day-to-day decisions are made by regionally-elected bodies known as the Local Education Authorities (L.E.A.s) to whom large government grants are given to administer the educational system in response to local needs. This grant is augmented to varying degrees by rates imposed locally, but in all areas the bulk of the money spent is government money. These L.E.A.s (democratically elected bodies) hire and deploy their own teaching force and also employ local advisors/inspectors who influence the work taking place in the schools. The choice of the personnel by elected representatives and their public servants must itself involve value judgments and the majority of those chosen to teach are "good citizens" and supportive of all that seems best in the current society. Their views and attitudes will undoubtedly be transmitted to their pupils over the years as part of the hidden curriculum. L.E.A.s also look for lively and innovative staff among their appointments and it is through these people that the major curriculum developments take place.

New Projects: Funding and Training

Most important developments start at the local level and receive encouragement from local, central and private funds.New teaching materials may well be published and thus made available for all other teachers in the land to follow if they choose. It is worth noting also that publication of materials brings the projects into the realm of public criticism and debate which is a healthy check on the system and prevents the spread of undesirable subject matter.

Teachers' Roles

These projects illustrate repeatedly the co-operation of teachers with other agencies, governmental and non-governmental, in response

to the felt educational needs of our citizens of tomorrow. The involvement of the teaching force not only ensures the practicality and relevance of the projects concerned but helps to promote the intelligent use of teaching materials in the nation's schools. The satisfaction of involvement stimulates the profession and is an ideal basis for the exchange of ideas and thus inservice training. Where projects involve pupils in the later years of a secondary school, then the influence of examinations becomes a major factor. Project organizers must harness the influence and energy of the examination boards if the curriculum is to be influenced in any systematic way. The Nuffield Science Project, for example, was able to persuade the Northern Joint Matriculation Board to set its own Nuffield paper which has greatly influenced the other school science examinations over recent years.

Reference has been made to the time factor involved in work of this kind, especially where teachers are engaged full-time in their legitimate classroom activities. To some instigators of change the system may seem to cause unbearable delay, but it is only fair to say that more accelerated activity takes place from time to time. For example, the last 12 months have witnessed a speedy development in the purchase and use of microcomputers in our schools. This change, in response to national need, came about through the direct action of government. The Department of Industry offered generous grants towards the purchase of these machines so that all school children could have direct hands on experience of the new technology. The L.E.A.s have responded immediately to the call and the pupils are delighted. They clearly adore the new toy and are seen to outstrip their teachers in their adaptability to the machines! There is a cautionary tale here, however, for without the co-operation and expertise of the teaching force in the writing of programs for these new machines, their full value will not be explored. In the long run, the rapid introduction of change into the schools, however desirable it may seem from society's viewpoint, must succeed or fail by the efforts of the teaching force.

Parental Role

Finally, having described the influences on the curriculum in the U.K. schools and the important place that teaching staff has in affecting change, it is important to say a word about the interaction of home and school. Research has confirmed that young children succeed best at school when parents give support and encouragement to their efforts. This is as true in developing good behavior patterns in pupils as in the learning process and academic attainment. Consequently,

there is an established need for schools to make and foster contact with pupils' homes so that maximum success may result for the youngsters concerned. The U.K. Government has recently attempted to encourage parental interest in their new Education Act, sometimes referred to as the Parents' Charter.

Sometimes, schools find homes are unable or unwilling to help their children, and support services may be called for and then enter the scene. Their work may vary from social intervention (e.g. housing, finance, general guidance) to adult education (e.g. the teaching of English to mothers of Asian schoolchildren who are handicapped in language development by the lack of English practice at home). In short, the successful education of our citizens for tomorrow is a co-operative effort involving children, teachers, and home. The resources for the enterprise may come largely from the state coffers but, in the U.K., the content of education is not closely directed by the paymasters themselves.

Summary

School education in the U.K. is largely pupil-centered and teachers, in their training, are encouraged to adapt contents and methods to individual children. The belief is firmly held that the community will be the richer for developing individual talents of youngsters to the full and that they, in their turn, will be better citizens by being 'fulfilled' and presenting their skills for the general good. Nevertheless, the curriculum of schools responds to more general and current social needs in diverse ways. Local initiatives are encouraged and the curriculum is constantly adjusting to provide for the vocational, recreational, health and political needs of tomorrow's citizens. The curriculum in U.K. schools is in a fluid state and while it may be never wholly right in its endeavors to educate for citizenship, it is surely never wholly wrong.

Primary and Secondary Education: Korea

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Current Status

In the Korean educational system the period of basic education lasts nine years. It covers six years of primary school and three years of middle school education. Elementary general education is provided during the former and is followed up by secondary general education during the latter.

The six years of primary school are compulsory and an existing plan calls for mandatory middle school education by 1983. The percentage of primary school attendance at present is 100% and that of middle school is 95%.

The purposes of primary and middle school education are provided for under the Education Law. Primary schools which provide children with elementary education required for social life seek the following goals:

1. the training of capabilities to correctly understand and use the national language in daily lives;
2. the promotion of understanding of the relationships between individual citizens, society and the state, moral principles, a sense of the responsibilities, public-mindedness and cooperative spirit;
3. the training of capabilities to observe and deal with nature

and its phenomena occuring in daily lives in a scientific manner;
4. the training of capabilities to correctly observe and deal with arithmetical problems occurring in daily lives;
5. the promotion of a basic understanding of and basic skills to deal with livelihood and occupational problems occurring in daily lives;
6. the cultivation of a basic understanding of and basic skills in music, art, literature, etc., which are conducive to enriching life; and,
7. the ensuring of development in harmony of the mind and the body through the promotion of an understanding of health problems and a habit beneficial to the maintenance of good health.

Middle school education is a follow-up of primary education and seeks to achieve the following goals:

1. to further the results of primary education in order to help cultivate integrity and qualities benefitting to responsible citizens;
2. to help cultivate knowledge and skills in jobs, a respect for work and capabilities to decide on future courses in the light of individuals' aptitude;
3. to encourage autonomous activities at school and help cultivate crucial ability; and,
4. to encourage good health and a healthy spirit.

Primary School

The curriculum for primary education includes the following subject areas: Korean studies, arithmetic, social studies, science, music, physical education, arts, manual skills, and moral education.

Middle School

The curriculum for middle school includes the following subject areas: moral education, Korean studies, national history, social studies, mathematics, science, physical education, music, Chinese characters, foreign language, occupation and home life, skills (male), skills (female), and optional courses.

Problems and Prospects

Primary Education

Overcrowded classes are a problem facing primary education today. The average number of children per class is 61 in provincial cities and 72 in urban centers. This is a situation the government has tried to mitigate for a long time. A relative decrease in rural population has resulted in a comparative decrease in the size of primary school classes in rural communities. However, the situation has been deteriorating in urban centers in spite of heavy government spending in primary education facilities.

There are an average of 56 classes per school in urban centers with each class accommodating an average of 70 children. The accommodation per school is approximately 4,000 children. A problem inherent in such overcrowded schools is seen in the impersonalization of relationships between the teacher and the pupil. A solution to this problem may be found in the partitioning of such overcrowded schools. Such partitioning, along with the mitigation of overcrowdedness in classrooms, is a priority task facing Korea's primary education.

A second problem facing primary education pertains to the curricula of elementary schools which overemphasize intellectualism at the expense of necessary basic learning in speech ability and and arithmetic concepts. The present curricula seem to be appropriate for the higher (fourth through sixth) grades. However, reorganization of the curricula seems to be in order if greater emphasis is to be laid on the development of the basic ability of speech, a sense of number, a scientific way of thinking, community consciousness, and intellectual and aesthetic tendencies.

The changing needs and tasks of primary education call for the specialization of function of teachers for lower and upper grades. The teacher of a lower grade class is not only required to take charge of that class but also has to guide the children in a specialized field of activity while the teacher of an upper grade class dedicates him/herself to the teaching of a specialized course.

Middle School

The government has been laying groundwork for making middle school education compulsory beginning in 1983. Although the percentage of middle school attendence has increased rapidly in recent years and now stands at 94%, investment resources have been a problem in bringing the government's goal to realization. When the attendance

rate increases to 98% (as projected for 1986) the number of students attending middle schools will increase by 300,000. So, finance is a task which needs an urgent solution.

The necessary increase in middle school accommodation must be paralleled with a reduction in the size of classes. At present the national average number of students per middle school class is 65, and the figure in urban centers is 71. The government expects the number to decrease to 55 by 1986 and to 45 by 1991. Such reduction in the size of classes, along with the natural increase in the number of students by 300,000, will require a vast expansion of educational facilities.

Also urgent is the securing of the additional number of teachers that will be needed. There will also be the need for an "Educational Data Office" which will plan guidance on life, future courses, and special activities for the students, as well as extending assistance to the teaching activities of the teachers. And the specialized functions of the individual teachers should cover nursing, future course guidance, research, the compilation of educational materials, etc. These changes will require the ratio of the number of teachers to a class to be at least 2.00 as compared to 1.46 at the end of 1978.

The projected increase in the number of students attending middle schools is expected to entail a further diversification of student characteristics which in turn will render the task of learning guidance more difficult.

This difficulty may be overcome to some degree by an adequate reorganization of the curricula, the development of a diverse range of learning materials, the production and dissemination of special materials for students giving a poor showing, and the conducting of a special program for gifted students.

Regional Programs

The development of educational programs suitable to specific regional communities and their schools will also be a constructive approach. As for the difficulties expected from a further diversification of student characteristics, the formation of small learning groups at the principal's discretion may provide an answer by helping to foster personal teacher-student relations. This type of approach will be most effective for poor students and it will provide a greater opportunity for the teacher to take part in the student's decision-making process regarding his future course.

A new system of evaluating the student's achievement in the pursuit of his overall goals of learning is preferable to the present system under which numerical ratings for each subject of learning determines the performance of the student.

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SECTION SIX:
Preparation of Teachers for Basic Education

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The Preparation of Educational Personnel for Basic Education

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American Education and Teacher Education

Introduction

Basic education, as described by Egypt's Ministry of Education, is designed to be oriented toward life situations and to provide prevocational and applied scientific training, so that at the end of their programs students will be prepared either to face life or to continue their education. The American philosopher-educator, John Dewey spent more than half a century describing and explicating an educational program not unlike the new basic education. Through his professorship at Teachers College, Columbia University, Dewey wrote and lectured to successive generations of educators, describing a system of education that integrated theory and practice and urging its acceptance. For example, in his "Schools of Tomorrow," written in 1915, Dewey wrote: "We are concerned with . . . fundamental changes in education, with the awakening of the schools to a realization of the fact that their work ought to prepare children for the life they are to lead in the world." He also said that children learn by doing, and that, "To the educator for whom the problems of democracy are at all real, the connection between the child and environment must be as complete and intelligent as possible, both for the welfare of the child and for the sake of the community."

The concepts that Dewey described seemed simple, but their development and use were unusually complex. Teachers, administrators, and many of Dewey's professor colleagues were attracted to his exciting and demonstrably successful ideas, but when they tried to apply his teachings, they discovered the difficulties inherent in developing a learning environment that drew together the systematic knowledge of science and society with the real world of children and youth.

Some of Dewey's disciples succeeded in their difficult task; many failed—some of them failed miserably. Partly because of these failures, partly because of the way they failed, and partly because a new wave of conservatism has swept across our country, the education described by Dewey that offered so much promise has been renounced by many persons and its creator has been cast aside by layman and opportunistic professional alike, at least for the time being. Interestingly enough, 65 years ago Dewey dealt directly with the issues that his latter-day critics have raised. One of their criticisms is that curricula in schools described by Dewey were to be built on the narrow base of what was of immediate interest to the child, but Dewey himself issued the same caution. This is what he wrote in "Schools of Tomorrow":

> But if lack of interest is not to be admitted as a motive in selection of class work, it is fair enough to object that interest cannot serve as a criterion, either. If we take interest in its narrowest sense, as meaning something which amuses and appeals to the child because of its power of entertainment, the objection has truth. The critic of the new spirit in education is apt to assume that this narrow sense is what is meant when he hears that the pupils ought to be interested in what they are doing. Then logically enough he goes on to point out that such a system lacks moral fiber, that it caters to the whims of children, and is in reality an example of the general softening of the social fiber, of every one's desire for the easy way. But the work is not made easy for the pupils; nor yet is there any attempt to give the traditional curriculum a sugar coating. The change is of a more fundamental character and is based on sound psychological theory. The work given to the children has changed; the attempt is not to make all the child's tasks interesting to him, but to select work on the basis of the natural appeal it makes to the child. Interest ought to be

the basis for selection because children are interested in the things they need to learn.

Just as many teachers and administrators studied John Dewey's philosophy and sought to apply his teachings, so did numerous teacher educators. But just as our schools have fallen short of understanding, accepting, and applying Dewey's educational philosophy, so have our colleges of teacher education. We failed at first because we simply lectured about his ideas, thinking that our descriptions would provide the guidance our students needed so that they could apply the ideas in their own classrooms and schools. Ultimately we began to realize that this would not work, that we could not use the lecture method to instruct prospective teachers how to understand and apply Dewey's philosophy of education. We came to realize that if we really believed Dewey's philosophy, we should develop teacher education programs that embodied it.If we really subscribed to the idea that people learn best through a synthesis of didactic presentation, explanation, and interpretation with practical experience in applying the principles taught, our teacher education programs should incorporate such a synthesis. If, for example, we want our students to be able to use a field trip as an effective learning experience, we should not try to instruct them by the lecture method alone. Instead, we must provide a total experience, one in which we talk about field trips and their role in educational programming, have the students help plan a field trip, take them on the trip, and finally, review the entire experience, helping the students to view it in relation to their total course work and to see the strengths and weaknesses of this particular trip in relation to the intended outcomes.

There are two reasons why lectures will not suffice in instructing prospective teachers in Dewey's educational philosophy, or in the new basic education. The first reason is that prospective teachers should be instructed by the same method they are being taught to use. Through direct experience with the model they are expected to follow, prospective teachers will be able to adjust their own teaching more readily. This rule is especially applicable in the case of Dewey's educational philosophy which requires an integration of theory and practice. Only if prospective teachers have this complex and unfamiliar approach modeled for them can they learn to use it dependably.

The second reason for observing Dewey's philosophy when instructing prospective teachers is related to the first. It is that the philosophy is valid; therefore, instruction should be based on that philosophy. As Dewey said," . . . it is a mistake to suppose that practi-

cal activities have only or even mainly a utilitarian value in the schoolroom. They are necessary if the pupil is to understand the facts which the teacher wishes him to learn; if his knowledge is to be real, not verbal; if his education is to furnish standards of judgment and comparison."

Teacher Education in the United States

There is not a single, unified teacher education program in the United States. Indeed, each of the more than 1,200 colleges and universities offering teacher education takes pride in one or more unique aspects of its program. This diversity, which is the despair of both orderly bureaucrats and ambitious textbook publishers, also is one of the great strengths of the total enterprise. Fresh ideas are constantly being developed and tested in the informal laboratory of a single classroom or portion of a teacher education program. Those ideas that possess the greatest vigor, or that are advanced by the most effective advocates, are tested more extensively and may become widely adopted and adapted.

Program requirements for prospective teachers are established independently in each of the 50 states. However, the state requirements tend to be fairly general so that each college or university has substantial freedom in formulating its program. Furthermore, even within each college or university, the individual student usually has some freedom of selection. The single minimum standard for both elementary and secondary teachers across all 50 states is a baccalaureate degree.

The content of U.S. teacher education programs can generally be divided into three parts: general education, major field, and professional education. General education courses constitute perhaps 35 to 40% of a student's program. They are intended to give the student at least a minimal liberal education spanning the humanities and the social and natural sciences. The major field portion of the program differs for prospective elementary and secondary teachers. For secondary teachers, the major field or fields form the content that the teacher will instruct, i.e., biology, mathematics, history, or a specific non-English language. For elementary teachers, the major field may be an academic major similar to that for secondary teachers, or it may be a combination of elementary education and more extensive general education. In both cases, the major field is likely to form from 30 to 50% of the student's program. Professional education courses make up from 15 to 30% of the prospective teacher's program. They include

coursework in such fields as history and philosophy of education, psychology of development and learning, curriculum development, methods of teaching, and use of media in the teaching process. The professional education portion of the teacher education program also includes student teaching and usually a seminar in which the student is helped to synthesize the practical experience of student teaching with the methods and theory courses.

Little change has taken place in the past 20 years in the general education and major fields portions of a typical teacher education program. Both the course content and the teaching methodologies are controlled by faculties in liberal arts and sciences. Only very infrequently have education faculties made serious attempts to influence course content or methods in the academic fields.

Changes in Student Teaching

The student teaching experience in the professional education portion of the teacher education program has changed in two ways: first, in many instances the student teaching assignment has been lengthened. Furthermore, because many elementary and secondary classroom teachers instruct differently than their predecessors did 20 years ago, student teachers receive daily supervision that is different from that of the preceding generation.

Changes in Methods and Theory Courses

The greatest changes in U.S. teacher education programs have occurred in the methods and theory courses of the professional education sequence. These changes are of three types: more complete specification of outcomes; differences in content; and increased practical experience associated with the classroom instruction.

During the 1960s and early 1970s, much of the energy in American teacher education focused on increasing the specification and achievement of performance outcomes. Desired results were described as behaviors the student would be able to perform as a result of taking a particular course or completing a program. Some performance objectives involved answering questions correctly on a paper and pencil test, but many others were much more active in their implications and included everything from making a lesson plan, to constructing transparencies for an overhead projector, to tutoring a single student, to critiquing a colleague's micro-teaching performance, to teaching a lesson in a regular classroom.

Psychological Base for Teacher Education

Perhaps the greatest changes in recent years in content of teacher education programs are those related to the psychological basis for those programs. Prior to 1960 there were essentially no consistent theoretical bases for teacher education programs. Findings from empirical psychological and educational research were used in educational psychology and methods texts and courses to illustrate and buttress specific points in an eclectic potpourri of ideas and instructions, but there was little that was theoretically systematic. During the 1960s and 1970s, this condition was substantially modified so that now many books and courses do reflect a single, theoretical perspective, the two most common perspectives probably being operant behavioral psychology and Piagetian developmental psychology.

At approximately the same time that we began establishing performance objectives in our classes and programs, we also started building a larger number of varied, active laboratory and field experiences into our development, learning, and methods courses. No longer do we depend on lectures and class discussions to teach the very active processes that are involved in human development, in learning, and in teaching. Students now have laboratory and field experiences that gradually increase in breadth and scope and culminate with student teaching.

Many teacher education programs contain completely and carefully planned sequences of laboratory and field assignments. Such sequencing is likely to include: observing and interacting with children or youth in both school and non-school settings and reporting the observations and interactions; assisting a classroom teacher; tutoring a child; teaching small groups of classmates, with some segments being videotaped for analysis and criticism; and student teaching.

Teachers for the New Basic Education

I have briefly reviewed America's experience with Dewey's educational philosophy as it affected our schools. I have also reviewed the current status of teacher education in the United States. This was done to provide a better basis for commenting on the new basic education and on the preparation of teachers and principals to work in that program.

I strongly endorse the fundamental concepts that form the foundation for the new basic education as described by the Egyptian Ministry of Education:

1. the introduction of prevocational education and the orientation of science teaching towards application aiming at furnishing children with working knowledge and skills;
2. the orientation of all subjects . . . towards life situations and the solution of specific problems;
3. the introduction of prevocational subjects . . . as part of the curriculum . . . from the fourth grade till the ninth grade; and
4. the teaching of applied science . . . from the fifth till the ninth grade.

Each one of these concepts forms a useful goal for education of children and youth. What could possibly be better than prevocational and science teaching aimed at furnishing children with working knowledge and skills? Isn't the orientation of all subjects towards life situations a grand ideal? The problem with these goals is not with their desirability but with the difficulty of achieving them. And perhaps the greatest problem with achieving these goals is that they appear to be so simple.

The success of a teacher education program for the new basic education will depend on:

1. an appropriate curriculum
2. effective instruction of students in that curriculum;
3. a student teaching experience in a school that properly represents basic education;
4. a seminar accompanying student teaching in which prospective teachers are helped to integrate their total teacher education experience;
5. one to three years in the first teaching position in which close supervision and support are supplied by the school and the teacher training institution working together; and
6. a recognition that preparing teachers to instruct effectively in basic education will be a complex and expensive process.

The curriculum in a teacher education program for basic education will need the same three elements described earlier as making up a U.S. teacher education program, i.e., general education, major field, and professional education. However, the individual courses in the three elements of that curriculum will require special attention because they must reflect the perspective of basic education.

Within the general education portion of the program, perhaps one-third of the total, the student should receive the elements of a liberal education; however, the courses should be designed to combine theory and practical applications in order to guide prospective

teachers toward the goal of orienting all subjects towards life situations. For example, a course in urban sociology should be more than a series of lectures; it should require that the student observe urban problems and issues and, where possible, participate in a public or private urban institution. The student should relate these experiences to the course lectures both in discussions and in a set of carefully designed written exercises. If a class in urban education were being taught in the United States, a student might spend some time observing or volunteering in an Opportunities Industrialization Center, a Head Start project, a precinct police station, a subway station, a Salvation Army or Goodwill Center, or a city council meeting.

It is important for students to observe and/or volunteer, not because those acts are significant learning experiences in themselves but because they provide the experiential basis for understanding lectures and for participating in discussions of related principles. Both the experience and the abstract/theoretical lectures and discussion are essential to the learning process, but neither in itself is a sufficient condition for the type of learning described in the new basic education. Only if general education courses provide a thorough synthesis of practice and theory can a proper base be laid for the professional education courses that follow.

Major courses should be patterned after the model described for general education. That is, courses in the major field should also combine practical experience with lectures that describe the theoretical and factual basis for the course. This approach typically is used rather effectively in laboratory sciences, foreign language courses for which there is an accompanying laboratory, and such studio disciplines as art and music. The combination of practical and theoretical is much less frequently found in social science programs, but it is no less important. It is every bit as important for the social science student to have first-hand experience with political science,sociology, and history as it is for the chemistry student to have such experiences with test tubes, beakers, chemicals, and bunsen burners.

The professional education portion of the teacher education program should occupy at least three semesters of intensive, demanding coursework and practical experience. There is an enormous conceptual and factual base of human development and learning and of educational philosophy and sociology that must be mastered and made a useful part of the prospective teacher's information fund. In early parts of the program this information base can be developed partially in fairly general educational settings, i.e., college classrooms and youth clubs. However, even when studying about development, learn-

ing, sociology, and educational philosophy at a general level, at least part of the student's related experience should be in schools. In middle courses of the program, most of the application should be in classroom settings. In later stages of the program, the primary locus must be the classroom but with an accompanying seminar in which extensive, deliberate effort is made to help the student connect learning/development/sociology/philosophy facts and concepts to lesson plan preparation and to classroom instruction and management and student evaluation procedures. Too often these are treated as almost totally independent parts of the student's educational experience. The result is that students often think of pre-student teaching courses as being of little value or even trivial, and, in fact, if no attempt is made to connect them with later experiences, they may not be of much value.

All courses in the professional education portion of the program for prospective teachers should be intensively clinical. This does not mean that they should be apprenticeships nor even that they should consist entirely of a planned sequence of exclusively clinical experiences. Such a program would be intellectually sterile and would provide no basis for understanding the immediate experience or for generalizing to future experiences. As Dewey wrote: "Mere activity, if not directed toward some end, may result in developing muscular strength, but it can have very little effect on the mental development of the pupils. The children must have activities which have some educative content." What is meant by saying the program should be intensively clinical is that every unit in every course should have both a didactic/discussion portion and a clinical or practical portion. The instructor should describe in advance what is expected as a unit outcome and how the theoretical and practical are intended to fit together to produce that outcome. At least a part of the evaluation of student achievement in the unit should require the student to synthesize the theoretical and practical; it is not adequate to test performance on one or the other or the two separately. Mastery must be tested in a synthesized format.

Years are spent in writing a textbook and hours may be spent in preparing a single lecture. Equal effort must be devoted to creating or designing the practical experiences that give reality to text and lecture. This does not imply that the experiences must be complex. Understanding of a child's intellectual development can come from application and discussion of relatively simple tasks or tests. But if the teacher education student is to understand the functional meaning of object permanence or conservation or formal operations, that student must experience some children/youth who have not mastered these

constructs and others who have and, ideally, some who are struggling with the process. Movies and videotapes can be helpful in reifying the process and the differences between stages, but there is no satisfactory substitute for a certain amount of first-hand experience. The student who has experienced a child at the concrete operational level can understand in a more functional manner why the form in which an assignment is given is of special importance to concrete-level children.

The entire professional education portion of a prospective teacher's program may be thought of as having content, location, and method. The content of beginning courses is more theoretical, the courses tend to be taught in college classrooms, and the method is relatively more didactic. Mid-program courses—usually methods and media—have a somewhat more practical orientation though still with a great deal of book work and writing; they have a substantial mixture of classroom, laboratory and field experiences, and the methodology is both lecture-discussion and experiential. Late-program courses—largely student teaching and related seminars—are practical, but tied back to theory and method; they are largely field based; and the major portion is experiential. Despite these general statements about progression of the program from didactic presentations of theoretical material in university classrooms to practical, first-hand experiences in the field, it is important once more to note that every course, and every unit in each course, must synthesize the theoretical with the applied and that later portions of the program must build from those that took place earlier if the entire program is to be successful.

Instruction

Much of the instruction dimension of the proposed teacher education program is implicit in the curriculum, i.e., professors should model the teaching behavior expected from the students. They should provide direct experience with what they want the students to learn, and should design lectures/discussions to tie as directly as possible to that experience.

Student Teaching

New teachers repeatedly report that student teaching was the most important part of their teacher education program. Some say that it was the only part that was of value. Their behavior validates this generalization for they are more likely to pattern their own teaching after that of their cooperating teacher than after that which they learn in their coursework. Thus, it is vital that cooperating

teachers represent the desired ideal as closely as possible. In the beginning phase of such a novel program as the new basic education, this will mean that substantial attention must be given to inservice education and supervision of cooperating teachers as well as student teachers.

Student Teaching Seminar

A seminar accompanying student teaching already has been mentioned several times. This seminar can be one of the most important portions of the entire teacher education program. One purpose of the seminar is immediately practical in that it should permit a sharing of experiences among students and should help them to solve problems that they meet in their individual assignments; an even more important purpose of the seminar is to help students interpret their student teaching experiences in the light of their theory and methods courses and also to assist them in seeing how they can generalize their combined theoretical and practical information to as yet unexperienced circumstances. Obviously, the person who conducts this seminar must know the entire program thoroughly and must be able to guide students in drawing on their earlier classes in interpreting and responding to the rigors of student teaching.

Supervised One to Three –Year Period of Beginning Teaching

It is as faulty to assume that a new teacher should be able to function independently the first year as it is to assume that a new doctor should be able to do so. In each instance, the new professional needs a strong support system to help get started. To provide this support system, the school and the teacher education institution should work together. The support system should emphasize constructive assistance; however, at some point a judgment should be made as to whether the new teacher is being sufficiently successful to continue as a teacher. This judgment should be made in part by persons other than those responsible for providing direct assistance to the new teacher.

Principals for New Basic Education Schools

Although we almost always view the instructional process that takes place in the classroom as being essentially the only vital educational transaction in a school, in fact, the leadership that the principal supplies has a powerful influence on what the teacher does; furthermore, the principal often determines whether the other services the

school supplies will support and enhance the philosophy represented in the instructional approach, whether the supporting services will provide only a neutral environment for that philosophy, or whether they will be actually hostile to it. Because of the central role exercised by the school principal, some attention must be given to that role and towards preparing principals to function effectively in it.

There is not time to describe in any detail what characteristics a training program for principals should possess. Suffice it to say that the principal should have the same philosophical orientation as the teachers in a new basic education school. A thorough grounding in that philosophy can come only from some experience with it, both in a training program and in actual classroom teaching. If the prospective principal has not served as a teacher in a school for new basic education, the training program should provide a limited amount of that experience, with a highly supportive modeling and supervising system so that he/she will have a successful experience and will understand the importance of such support for new teachers.

The principal training program should be modeled after the teacher education program in that it should be a synthesis of theoretical and practical. Every course should provide such a synthesis and should help the students comprehend the relationship between that course and what the principal should know and be able to do. Above all, the training program should ensure that the prospective principal has a working understanding of the philosophy and principles of the new basic education and is able to help teachers progress toward that ideal.

Concluding Statement

I would be somewhat less than honest if I did not mention two caveats to my discussion of teacher and principal education for the new basic education. The first program is that such a program is incredibly complex and difficult to design. The program must possess the abstract content that we are accustomed to teaching, it must provide a set of practical experiences to accompany the sequence of the abstract content, and it must ensure the synthesis of the two so that the student develops a new level of understanding that is both abstract and concrete. Even with unlimited resources this is a difficult undertaking.

The second caveat grows from the first; the program is expensive – expensive in faculty time, in student time, in equipment, and in materials. Students cannot be crowded several hundred into a classroom and lectured to, tested, and graded. There should be some

lectures, but most of the program involves extensive individual and small group work, videotaping, critiquing, etc. It requires professors to observe individual performance in live and videotaped circumstances and to assist students in criticizing, understanding, and modifying their behavior.

Teacher education for the new basic education will be neither cheap nor easy; in fact, it will be expensive and very difficult. However, the outcomes will be well worth the time, energy, and cost. Dewey wrote:

> Where children are fed only on book knowledge, one "fact" is as good as another; they have no standards of judgment or belief. Take the child studying weights and measures; he reads in his text-book that eight quarts make a peck, but when he does examples he is apt, as every school teacher knows, to substitute four for eight. Evidently the statement as he read it in the book did not stand for anything that goes on outside the book, so it is a matter of accident what figure lodges in his brain, or whether any does. But the grocer's boy who has measured out pecks with a quart measure *knows*. He has made pecks; he would laugh at anybody who suggested that four quarts made a peck. What is the difference in these two cases? The schoolboy has a result without the activity of which it is the result. To the grocer's boy the statement has value and truth, for it is the obvious result of an experience—it is a *fact*.

Like the grocer's boy in this example, teachers and principals who are prepared in a program that synthesizes theory and experience will know that the facts we teach them are indeed facts, because they will have experienced them. And that is what education is about.

The Role of Inservice Education in Promoting Educational Change in Australia

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Background

Many commentators, including distinguished visitors, have remarked on the unusual degree of centralization in the organization and administration of Australian society. The origins of this centralization are to be found in the pattern of colonial settlements on widely scattered parts of the coast in temperate areas of the continent in the late eighteenth and early nineteenth centuries.

One of the services for which people looked to government to provide was education. Between 1872 and 1895 education acts in each of the six colonies defined the broad pattern of primary education as free, compulsory, and secular. In each colony—or state, as they became a federation in 1901, public education was placed under the control of a minister responsible for the work of a department of education located in the capital city. Today, education is dominated in both primary and secondary sectors by state-run institutions as about 80% of all primary aged children (5 - 12 years) are in government primary schools and about 75% of secondary aged children (12 - 18 years) are in government secondary schools. (The Schools Commission Report for the Triennium 1976-1978).

In recent years in some states, notably New South Wales, Vic-

toria, and Queensland, decentralization of some clearly-defined administrative powers has occurred. As Skilbeck and Evans (1976) pointed out, one characteristic of the centralized system which tends to be overlooked is the possibility of rapid structural change. An example of this was the rapid transition from selective to comprehensive secondary education which was effected in New South Wales in the 1950's and 1960's.

In recent years each of the states has tried to promote change in curriculum and instruction by providing significantly more resources for inservice education. In doing this they recognized that there is a wide variety of groups involved in education; the government, educational administrators, teachers, teacher educators, parents, students, employers. Each group, while recognizing that they are not homogeneous in themselves, have different perceptions, expectations, and priorities for schooling. These differences cause pressure and demands to be placed on teachers to resist changes in the operation of the educational system. The growing importance of inservice education and the reconceptualizing of inservice education in recent years has resulted from the recognition that over the past decade many of the goals the system has set for itself had not been achieved. I have not attempted to describe the large number of inservice programs that have been established—many of these are discussed by Skilbeck and Evans (1976)—but I will continue to highlight the major thrusts of these programs and list some of their strengths and weaknesses.

Inservice Education

A major part of inservice education programs has consisted of courses to upgrade teachers' qualifications. Many more teachers have participated in courses of this kind than the shorter, specific, and highly practical courses that do not carry any academic or promotional credits.

At the secondary level, subject associations have always been a major force in inservice education, paricularly of the short course, non-credit variety. The subject associations are well placed to assess teachers' needs within particular subject areas and to respond to them with courses initiated and managed by teachers themselves. Regional teachers' centers have increased in recent years and have played an important role in meeting specific needs, particularly for primary teachers.

Inservice education still has major deficiencies and its impact is felt only by a minority of teachers. Deficiencies include:

1. overall lack of resources in terms of personnel, materials and time;
2. unequal opportunities for city/country teachers;
3. lack of adequate incentives and rewards;
4. an overall lack of clearcut policies and mechanisms of coordination;
5. lack of research and limited strategic thinking about needs and resources;
6. limited consultation of teachers by administrators and course organizers; and
7. lack of research into program effectiveness.

Greater thought needs to be given to these if the investment in inservice education is to achieve the results expected from it.

School-Based Inservice Education

While upgrading courses is desirable in the content and methodology of subjects, it is essential that we do not ignore that teachers are members of a school. Having competencies, conceptualizations and commitments is one thing; utilizing them in solving problems of practice in one classroom and school is another. New knowledge and skills have to be interpreted and applied in the organizational setting of a particular school. It is for this reason that much attention needs to be given to school-based inservice programs.

The quality of teaching in a school is a function of the level of professional development of each member of the staff. As there is a close relationship between teacher development and curriculum development, it is imperative that each school has a staff development program aimed at helping teachers to analyze, evaluate, and improve their teaching. Here, school principals become paramount as they should organize, provide, and encourage these school-based inservice education programs.

Power further reports that evaluations of inservice programs indicate that the most successful are those oriented toward solving a particular problem seen by the staff of a school as being a significant one facing the school and which involves the staff in working together to solve the problem. Programs which place teachers in an active cooperative role do promote professional development and result in improved teaching. However, it has become evident that the full potential of school-based inservice education will only be achieved when it receives the full administrative support to which it is entitled.

Many findings on innovation suggest that hearing about a new idea is not enough and again school-based inservice education becomes important because it allows new ideas to be reported, thoroughly discussed, and experimented with on a small scale. If successful, they can be seen in action by others who are then more ready to adopt them. This small scale trialling is also essential before adopting innovations that have succeeded in other countries, as it develops that self confidence in the experimenters which is essential to expand past the trial stage and also allows for adaption to local needs.

Curriculum Development

It would not be disputed that the success of a curriculum development project depends to a large extent on the quality of the inservice education that accompanies it. A curriculum program includes the following activities:

1. the development of curriculum guidelines;
2. the identification of appropriate methodology to implement the curriculum;
3. the development of skills needed to produce resources for the curriculum;
4. the identification of appropriate techniques for evaluating the curriculum; and,
5. the developing of skills in conducting inservice courses to assist in the implementing of the curriculum.

Implicit in this is a belief that better learning will occur in the classroom if curriculum development and teacher development are planned in tandem and do not happen independently of each other, as has often been the case in the Australian content.

Evidence suggests that while central authorities are prepared to allow greater autonomy in the area of inservice education, there remains a reluctance to devolve responsibility to the local level for the complete process of curriculum development. It is likely that a high measure of central control will remain and there are good reasons for this, particularly at the upper secondary level. The problem seems to be how central authorities can provide opportunities and incentives for local initiative, so harness local enthusiasm, and so achieve relevance in the curricula for the local community.

The Future of Inservice Education

The greater availability and increasing diversity of inservice edu-

cation in the past decade have made it a lively, creative period in the history of inservice education in Australia. As would be expected, strengths and weaknesses in programs have emerged and an effort is being made, at the professional level, to overcome the weaknesses. To a large extent this will depend upon an adequate provision of resources.

In reviewing inservice education in Australia for CERI (Center for Educational Research & Innovation), Skilbeck and Evans saw the major strengths and weaknesses as follows:

Strengths:

1. a growing awareness and recognition of the need for inservice education, its possibilities and likely development;
2. teacher involvement in decision-making;
3. a width and diversity of approaches;
4. the creative, experimental atmosphere which permits the free inflow of ideas and practices from whatever source;
5. the beginnings of system level thinking; and
6. growth of programs of school-based inservice education.

Weaknesses:

1. financing is short term and has not the appearance of an on-off system: this is particularly damaging to institutions such as teachers' centers;
2. career opportunities and career structures for inservice professionals have yet to be worked out;
3. underutilization of some parts of the educational system;
4. assumptions about the purpose of inservice education are still too narrow, e.g., the belief that its main role is remediation or compensation; and
5. the emphasis or lack of it that is given to evaluation and research.

Speculation about the future impact of inservice education is always difficult but it would be expected that inservice education will become increasingly more concerned with teaching and learning situations, resulting in improved implementation of curriculum objectives. If this direction is followed then it is to be hoped that the concern with teaching and learning situations includes a greater awareness of the social environment in which these situations occur and therefore places a greater emphasis on personal development and interpersonal relationships.

Preparing Teachers for Basic Education in Ireland

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Introduction

Necessity is compelling innovation in all aspects of education today, from the elementary level to the tertiary—including teacher training. The pressures are ubiquitous, though their sources vary from place to place. The need for reforms in the education systems of developing countries stems from pedagogic, economic, social, and psychological sources, frequently fuelled by the pressures that a largely uncontrolled educational expansion have been exerting on national budgets and the kinds of accountability that the latter sooner or later call for. The authorities in each country must answer local needs in the ways which seem most appropriate to them—and the basic education plan is proposed for discussion as Egypt's response to a need for a curriculum that will serve the best needs of both terminal school leavers and aspirants to further education during the years of compulsory schooling.

Educational Innovation

It is worthwhile noting that Mahatma Gandhi proposed in the 1930's that every pupil in elementary school in India be taught a handicraft, in and through which the education of the whole child, body, mind, and soul, in the different subjects of the curriculum,

would be effected. This basic education, as he also termed it, was to be his solution to the problems created by the intellectual and spiritual aridity, the increasing competitiveness and the alienating effects of frequently unsuitable formal education on the young. While the scheme had intuitively attractive features, evaluations of its success are varied and, by 1961, it seems that no more than 21% of India's elementary schools were following this kind of program. But while India in the 1940's and '50's is not Egypt in the 1980's, yet it may be instructive to note some reasons for its apparent failure there.

In the Republic of Ireland, the training of elementary and secondary teachers are two separate operations, the former by way of concurrent degrees in teacher training colleges, the latter by way of consecutive postgraduate diploma courses. Unlike most Western nations, the school population (in line with the total population) is still growing, and is projected to continue growing, though at about half the rate in the 1980's, of that achieved in the 1960's and 1970's. Situated geographically between Britain and the United States of America, Ireland has had to follow the acquisition of political sovereignty (reached in 1921) with the ongoing struggle to maintain a separate cultural and national identity, that will be valid for its citizens and that will not be overshadowed by the subjugation of the past, nor by its sometimes too influential, friendly neighbors. Again, Ireland has unique problems of rural exodus, of urban growth, and of industrial expansion, proceeding at rates that are exceptional if not unique in Western Europe. All these create enormous problems in the sphere of education. But they may render the country highly sympathetic with other nations sharing similar problems of growth, individuation, and self-assertion. It has taken a full two generations to achieve curricular as distinct from political independence, for instance, and Ireland is now ready to learn lessons from the developing countries of Africa and Asia, having so long sent teachers to almost every one of these countries on the assumption that it was the only way they who stood to learn anything.

Inadequate Teacher Preparation

One of the several reasons for the failure of Gandhi's Basic Education Scheme was in fact the inadequate training of teachers and the insufficient numbers of trained teachers who could implement it. This has been pointed out as a necessary, though not a sufficient condition for setting up a basic education program in Egypt. Emphasis was placed upon the importance of an appropriate training curriculum, both theoretical and experiential, for those who are to implement it, as well as on the need for adequate support services and

structures, by way of training for the teacher educators in turn and for the school principals. Also important was the induction or probation for the newly-fledged teacher during the first years following graduation and that this structure should have both its supportive and evaluative aspects. Lastly, this total innovation, far from being either simple or easy, will be expensive, complex, and difficult to accomplish successfully.

There are, however, some other aspects to this issue. First, there is the overall ecology of educational innovations, and the lengthy time-scale of any serious curricular change of this kind—probably ten years at a minimum. A school system is a sort of jigsaw puzzle of interlocking variables, whose close interdependence becomes apparent only when we try to alter one of the pieces, as is proposed here. Teacher training may be a sensitive, pivotal point indeed but it is only one of the many elements. Manpower, curriculum, and physical plant are all closely related to it and to each other; they in turn are facilitated and constrained at one and the same time, by finance and by social attitudes, for instance. You cannot change one piece without affecting others. Besides, the success of any innovation will be achieved not against an inert landscape but within a unique living system operated by real people. Success will depend greatly on what has already happened in the past, both within and outside the school system.

Teacher Selection

The first personnel problem of the proposed basic education scheme is the problem of teacher selection. Where are the necessary teachers, with the required skills, commitment, and motivation to be selected? Will Egypt retrain experienced teachers to acquire new skills and knowledge and identify with this new educational strategy? Those who have been themselves nurtured in a grammar-school type of tradition may not take very readily to the change. Or, will Egypt recruit skilled personnel from elsewhere, e.g. from agriculture or industry: and will the remuneration and status of the teacher prove attractive enough to entice those of the right caliber away from their existing path, into teaching? In Ireland there have often been problems with trying to ensure that such people would not lose out financially if they were to undertake such a change of profession. Alternatively, if Egypt opts to recruit by means of inservice courses for serving teachers, it may find that the conversion is only skin-deep and that when they later think that they are implementing it they may not realize that in fact this is not the case.

In Ireland there is a highly centralized school system at the primary level, and in 1971, the authorities introduced a rather far-reaching and radically different curriculum from what had gone before. This curriculum change however was not backed up by sufficient courses for teachers, with the result that the real level of implementation, even five years later, was still disappointingly low. There is no information on the extent to which Egyptian teachers may already be involved in the planning of the basic education scheme, but ministerial edict alone is not sufficient; some people including teachers, have a high tolerance of gaps between promise and performance! If Egypt wishes to make educational reforms stick, it must involve the teachers at the planning and elaboration stages as well as at the stage of implementation. This too is a very important aspect of teacher preparation.

Inservice Training

Some further questions arise. First, where will Egypt establish the requisite inservice courses to involve serving teachers in this new work? Some worthwhile innovations fail because existing plant or equipment cannot really be adapted to new purposes; one or more centralized purpose-built colleges sooner or later become essential if a thorough training job is to be done, and if teachers are to make the most effective use of costly equipment in preservice and inservice courses.

This leads to the question; what precise status will these new subjects have in the school and in turn in the eyes of student teachers? What will be their examination currency, if any? The tyranny which examinations exercise over the school curriculum is deplorable whatever their precise form from country to country. Nevertheless, as long as there are examinations, it is their currency that counts in the eyes of pupils, parents, and sometimes regrettably, teachers.

In Ireland, for example, during the 1960's, teachers felt the need for education in citizenship; this large and important area of knowledge and attitudes was being given no prominent place in school curricula. So a new subject, civics, was introduced with considerable enthusiasm into the formal curriculum. Textbooks were written, teachers were given training courses, and weekly times allotted on school timetables. But in order to keep so important an area free from cramming pressures, it was decided that it would not be formally included among the subjects in the important public examinations. The result is that today almost nobody takes civics seriously in schools; they are all too busy swotting for examination points in

"real" subjects. On this basis it would seem important that the subjects proposed under the basic education program be capable of leading on to something of examination value, sooner or later. It may take time for universities and other bodies to grant recognition to traditionally non-academic subjects, but it makes a great difference when they do.

In the Egyptian plan for basic education, it is important that such fundamental principles as the unity of knowledge and unity of this primary stage of schooling will be respected. The organic unity of the pupil's experiences at this stage of development should be taken as a cornerstone of teacher preparation, along with the detailed study of a student's capacities and limitations. There should be far less use of lecturing as a method of teaching student-teachers, and much greater use of small-group teaching. The teacher training course must be capable of achieving the following four objectives:

1. an understanding of the subject and its place in the curriculum;
2. an understanding of how it is learned by pupils at this stage;
3. the understanding, skills, and personal qualities necessary to teach the subject to pupils at this level; and
4. the understanding, skills, and personal qualities necessary to implement the discipline and control appropriate to teaching this subject at this level.

Educational Goals

Finally, there is the difficulty of reconciling the two aims in the basic education proposal. Each country must seek its own solution to this problem of whether schooling prior to the school-leaving age is to serve primarily the dictates of the world of work or those of further education. Some countries, including Ireland, have followed a policy of comprehensivization, risking a distortion of pedagogical values in some schools by doing so. But Egypt has the added problem that, as of 1977, over 40% of the teachers at this stage were unqualified, a case of growth outstripping provision. It has been said that the Africans of today have their feet in the neolithic and their head in the thermonuclear age. If this is relevant to Egypt, it is clear that a compromise must be reached between these two and the basic education plan may well be the answer, but, with the following provisos:

1. careful selection of recruits to teaching;

2. careful planning of the total innovation, taking account of the different parts of the system and their interrelationship;
3. ensuring that basic education subjects are treated with academic rigor and carry examination status;
4. involving teachers in the planning stage as well as its implementation;
5. respecting fully the capacities and expectations of pupils in planning the curriculum; and
6. ensuring a better balance between quantity and quality, and a greater match between ends and means in teacher preparation.

Figueroa makes the point rather well that our aims as educators must not be primarily economic but human ones. He says in his book, *UNESCO Handbook for Science Teachers*,"To educate for manpower needs and not manhood is bound to end in frustration and perhaps bloodshed, for it raises people's expectations for dignity as well as bread, and in the end it gives them a stone."

Innovations in Teacher Education in Malaysia

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Development of the Teacher Education System

Malaysia has a binary system of teacher education. The Ministry of Education is responsible for teacher education at the non-graduate level while the five local universities are responsible for teacher education at the graduate level. This paper is concerned with the education and training of non-graduate teachers for primary and lower secondary schools.

Prior to 1956, teachers for the various medium primary and lower secondary schools viz, Malay, English, Chinese and Tamil, were trained through a system of inservice education during weekends at normal training classes or teachers' preparatory classes. In addition to these part-time training programs, full-time training was provided for teachers of Malay-medium primary schools at two colleges. A small number of teachers for English-medium primary and secondary schools were trained at Malayan Teachers' Colleges at Kirkby, Liverpool, and at Brinsford Lodge, Wolverhampton, England.

With independence in 1957, the policy of the Ministry of Education, as enunciated in the Report of the Education Committee of 1956 (Razak Report), was to try to coordinate as far as possible the different training courses in order to produce teachers with comparable qualifications through a common pattern of teacher training for service in all government-assisted schools, irrespective of the media of training.

The result was the establishment of day training colleges and centers in 1957 for the preparation of primary teachers. Candidates with the minimum qualification of the Lower Certificate of Education (ninth grade) were admitted for a three-year basic course of training through the four language media but using a common content syllabus. Later, candidates with a Malaysian Certificate of Education (eleventh grade) could do a two-year course, and from 1968, the minimum entrance qualification for all candidates was raised to the MCE.

Potential lower secondary school teachers with the minimum qualification of MCE underwent a two-year basic course in Malayan Teachers' Colleges. In 1964 an integrated program was introduced whereby each of these colleges concentrated on specific subject areas. To meet the demand for a very large number of teachers to implement the comprehensive education program from 1965, regional training centers were established to provide two-year part-time courses for lower secondary school teachers. These courses were coordinated by the Ministry of Education with the assistance of the Malayan Teachers' Colleges. The part-time program was discontinued in 1968.

From 1970, the medium of instruction in the former English-medium primary and secondary schools was converted, in stages, to the national language, Malay. In view of this, teacher training colleges, both primary and secondary, began to adopt Malay or Bahasa Malaysia as the main medium of instruction, while English, Chinese, and Tamil continued to be taught as subjects.

To augment the supply of teachers through two-year, full-time courses, three-year, part-time vacation courses were also conducted for serving temporary teachers, especially for Chinese- and Tamil-medium primary schools, as well as for temporary Islamic religious teachers.

The integrated teacher training program for primary and lower secondary school teachers was launched in 1973. The various types of preservice teacher training programs offered by the 25 teachers' colleges in Malaysia are as follows:

Integrated Teacher Training Program

1. **The two-year basic course:** This is known as the Integrated Teacher Training Program and is aimed at preparing teachers to teach from primary grades right up to lower secondary level. The two-year program is divided into two parts—part one which is the first year, and part two which is the second year. In the first year, students follow a common area of concen-

tration to prepare them to teach Standard Four (Grade Four) to Form One (Grade Seven). In the second year, students are chan nelled into two streams—A or B. Group 'A' specializes in the teaching of lower primary classes—Standards One to Three with an additional preparation for handling preschool classes, while Group 'B' specializes in handling the lower secondary classes—Forms One to Three. Group 'A' students are trained to handle all subjects in the primary school curriculum, Group 'B' students, on the other hand, are given the choice of concentrating on one or two special subjects.

2. **The three-year basic course in trade subjects:** This is a three-year program offered to selected students at the technical teachers' training college. The professional aspirants of teacher preparation are the same as in the integrated program but students for this course have to specialize in one of the following areas: electrical installation and maintenance; machine shop practice; refrigeration and air-conditioning; motor mechanics; building construction; radio/television and electronics; or welding and sheetmetal.

Teaching Staff in Teachers' Colleges

The teaching staff of teachers' colleges may either be college-trained teachers with considerable teaching experience or university graduates with the diploma in education. In the early sixties the majority of the training college lecturers were of the former category, but this situation has gradually been reversed.

Selection of teaching staff is effected through transfers of teachers and other personnel from schools or other divisions in the Ministry of Education.

Non-university graduates are selected from teachers who have had considerable teaching experience in primary or secondary schools in the country. Besides their teaching experience they should also have attended some courses at certificate or diploma level in the relevent subject area, e.g. physical education, home science, audio-visual education, etc. University graduates should have at least three years teaching experience in school.

Various programs are carried out by the teacher training division aimed at improving, enriching, and updating the knowledge, competencies, and qualifications of its lecturers.

Innovations in Teacher Education

Instructional Strategies

Modular Instruction: The teacher training division is currently engaged in the development and production of modular instructional materials as a means of improving instructional strategies as well as optimizing students' own learning experiences in teachers' colleges. The aim is to introduce the modular concept of learning, utilizing self-contained instructional packages involving multi-media approaches.

As a start, printed materials have been produced covering four subject areas in the education syllabus; educational philosophy, sociology, psychology and classroom management. Twelve education lecturers from six colleges, who were identified as potential module writers, started work in early 1979 and have since produced six trial modules in their respective colleges. A further six modules are in various stages of preparation.

From this initial start, this activity has been extended to other subject areas of the teacher education curriculum in 1981. From the first group of 12 module writers, three have been sent to the United States in 1979 to attend a two-month preliminary course on module writing. Five more lecturers went in 1980 and this team has successfully conducted an induction course and seminar earlier this year for the benefit of other lecturers in colleges throughout the country.

Resource-based learning: In line with the new thinking that students' active learning is to be preferred to passive participation in lectures, the colleges are now introducing the concept of resource-based learning. Under current development plans, each college will eventually be equipped with the latest audio-visual equipment, language laboratories and CCTV (closed-circuit television) facilities. It is hoped that these facilities, together with existing libraries in colleges, can lead to the establishment of learning resource centers that can encourage active and meaningful teaching/learning activities among lecturers and students. A number of seminars and courses have been held in order to update lecturers' knowledge in the media field and to familiarize them with various aspects of media utilization.

In addition to the above, the teacher training division has also finalized plans with the educational media service division of the Ministry to produce a series of educational television programs specifically for students in teachers' colleges.

Microteaching: With the setting up of CCTV facilities in colleges, microteaching techniques are being increasingly tried out to

complement off-campus practical teaching by student teachers. In a microteaching seminar/workshop held early this year for college lecturers, the participants succeeded in producing a number of guidelines on the organization of microteaching in colleges and these have been disseminated to all colleges in the country.

New Curriculum Components

Music, Islamic Religious Knowledge and Moral Education in Pre-service Training: Up to 1978, music was only an elective subject for lower secondary level training. Beginning in 1979, however, a similar elective subject was also started for the primary group. It is realized now that music can play a wider role in the context of the primary school curriculum. Besides giving opportunity for aesthetic expression, the subject also gives scope for the achievement of national and cultural unity as well as the acquisition of language skills. The introduction of this elective is also seen as an effort to overcome the acute shortage of music teachers at the primary level, especially in the rural areas.

The government feels that a good grounding in religious knowledge is essential for producing good citizens and has made the teaching of Islamic religious knowledge compulsory in schools for all Muslim pupils. As a result of this, a separate teachers college was set up in 1977 for training teachers specializing in this area, for the primary as well as the lower secondary level.

It was also felt that Muslim students undergoing training in colleges should be exposed to a course in Islamic religious knowledge and non-Muslims should be exposed to moral education. This component was introduced in 1978 and all colleges are now provided with lecturers qualified in Islamic religious knowledge. Prior to this, the teaching of the subject was done only by part-time lecturers.

Cocurricular activities: The preservice training program continues to place emphasis on cocurricular activities and community service. Student teachers are required to choose and participate actively in one sport or game, one club or society, and one uniformed movement so that they may acquire the necessary competencies to assist in the organization and running of such activities in the schools. Since the implementation of this program, the teacher training division has worked closely with the National Associations of Scouts and Guides, the Red Crescent, and St. John's Ambulance to hold leadership training courses and seminars for the benefit of lecturers who are involved with such activities in their colleges. Funds are also provided to enable colleges to bring in coaches and instructors from outside to

conduct clinics and training programs for student teachers on various sporting activities.

Leadership Training: Leadership training for students is a recent innovation undertaken with the cooperation of the Ministry of Culture, Youth, and Sports. Under this scheme, student leaders undergo an intensive, two-week training program at the National Youth Training Center at Kuala Kubu Bharu, some 60 km. from the national capital. On their return to their respective colleges, those student leaders play the role of key personnel and conduct similar training courses for other student teachers. The training program emphasizes physical development as well as the acquisition of organizational and managerial skills to cope with stress and emergency situations. Courses held so far have proved to be very successful and it has been decided to make this program an ongoing activity.

New Areas in Inservice Courses: The one-year supplementary courses at the Specialist Teachers' Training Institute and the Temenggong Ibrahim Teachers College continue to be popular among teachers. Recent educational developments in the country have resulted in the introduction of new courses. One example is the supplementary course on remedial education which was started in 1979 as a result of an awareness for the need to equalize learning opportunities among the socio-economically disadvantaged pupils, especially in the rural areas. The course equips teachers with special skills to tackle the slow learners in the three R's. Another recently-introduced course in agricultural science, which complements the mobile inservice agricultural science program, started in 1974 at the Temenggong Ibrahim Teachers College. The first group of 20 teachers have also recently completed a course on educational guidance and counselling. More specialist courses in other areas are being planned for the 80's.

Teaching Practice

The system for teaching practice has undergone a major change since the introduction of the integrated teacher training program. Under the new system, student teachers will do a three-week orientation program in their first year of training and a full term teaching practice (about 14 weeks) in the final segment of their second year. This final teaching practice is held immediately after the final written examinations and students will be posted according to vacancies existing in schools throughout the country. This means that they will continue to serve in their respective schools as qualified teachers after their teaching practice is over.

The Three-Year Teacher Training Program

A national seminar was held in March 1979 to evaluate the existing teacher education curriculum and to give an opportunity for teacher educators to exchange their experiences, to discuss common problems, and to find solutions to them. The major findings of this seminar may be summarized as follows:

1. the period of basic teacher training be extended to three years;
2. the curriculum be reorganized and revamped to provide trainees with more time for self-study;
3. opportunity be created for more time for self-development;
4. teaching practice be reorganized to make it more effective; and
5. the cocurricular component be reexamined to achieve optimum results.

The recommendation that the period of training be extended to three years was favorably received by educators and planners alike. The Cabinet Report on Education published in late 1979 has also made the same recommendation. It is found that the present two-year period of training can be further improved to produce the right caliber of teachers to meet the demands of a fast-developing country. Further, the knowledge explosion and the increasing demands of new curriculum components in the training program have resulted in a very overloaded curriculum.

Teacher educators generally feel that the present two-year training period makes heavy demands on student teachers and gives them very little time for self-study, recapitulation, and consolidation of what they learn from their lecturers. The lengthening of the training period to three years is to allow for more consolidation of the teacher education program, which is necessary for the development of a well-rounded teacher so that he can become an agent of change in the true sense of the word rather than a mere instructor or a giver of knowledge.

The final stages of formulating strategies for the implementation of the three-year preservice training program was completed in 1980 and the program was officially launched with the new student intake in mid-1981.

Conclusion

The policy of the Ministry of Education is to provide adequate initial preparation of teachers at the preservice level so that they

would be competent to deal with problems encountered in the classroom on completion of their training. Their professional preparation, together with their classroom experience, should then serve as a basis for further inservice training in their chosen areas.

While the supply of teachers through existing training programs is adequate to meet current needs, the Ministry has, nevertheless, to plan for an anticipated increase in teacher requirements as a result of possible improvement in the class size and the teacher-pupil ratio in schools. Provision has been made under the Fourth Malaysia Development Plan (1981-1985) for an expansion in physical and teaching facilities to meet this additional demand.

In line with the recommendations of the Cabinet Committee on the Implementation of the Education Policy published in 1979, various task forces are at present reviewing teacher education and supply with the view of making it more relevant to the needs of schools in the 1980s. Possible new areas of emphasis in the teacher education curriculum are: concentration on the teaching of the three Rs, the components of which are being worked out by the Ministry's Curriculum Development Center; remedial education; and, educational guidance and counselling. Among other things, better exposure to these areas would assist the teacher in fulfilling his role as a facilitator of learning in the school.

Another important area which is currently receiving attention is closer cooperation between teacher training colleges and faculties/departments of education in the five local universities. A national teacher education council has been proposed to coordinate teacher education and supply at both levels, to promote closer cooperation between the two systems, as well as to avoid any duplication of provision and effort.

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SECTION SEVEN: Relating Theory to Practice through Innovation

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Strategies for Getting Practitioners to Utilize the Findings of Research, Evaluation, and Development

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Introduction

In most countries, the initial training of primary, secondary, and tertiary (university) teachers does not yet include a substantial introduction to educational research and measurement. In fact, many teacher training institutions have practically no research activity.

As a consequence, most teachers do not know the standardized tests related to the subjects they teach; they ignore the basic statistical methods and techniques needed for any empirical approach of educational problems. They have not been introduced to educational technology and automatic data processing.

There is thus an important difference in the level of qualification of teachers and other university trained professionals as engineers, physicians, etc., who study in close contact with empirical research at the most advanced level in their field.

While a physician reads easily new research reports—including their statistical part—and is immediately able to apply some of the findings to his daily practice, this is not the case for most teachers in Belgium and in many other countries of the world. As educational research and development reach an ever-increasing level of sophistication, the gap between practice and research becomes broader and broader.

Getting Educators to Use Research Findings

What are the main problems in getting practitioners to utilize research findings? They are of a quantitative, psychological and methodological nature. The case of Belgium will help us in illustrating this.

Quantitative Aspect: There are approximately 200,000 teachers in Belgium; two thirds of them will still be teaching in the year 2000. Unless a further training action is extended beyond a very small minority (with little impact on the system as a whole), the dimension of intervention is enormous.

Psychological Aspect: There is a critical difference between keeping scientifically-trained professionals informed of the developments of their field, and changing the reasoning, the attitudes, and the vocational behavior of many thousands of artisans.

Methodological Aspect: With highly qualified people, the problem is mainly the dissemination of and the access to information. With poorly qualified people, long-term sophisticated behavior modification strategies are needed.

From these premises, we can now distinguish three types of further training strategies: dissemination of information, actions of sensitization, and deep behavior modification.

Dissemination of Information

The control of this type of action is easily centralized. Lectures, review, newsletters, open or closed-circuit television, cassettes, and soon videodiscs, are familiar to everybody. Systems of computer-monitored selective dissemination of information are available . . . but remain extremely expensive.

Experience shows, however, that information dissemination is useful only if the receiver has a sufficient training and information level to understand its meaning, and a sufficient motivation to translate it into practice.

In our experience, the effectiveness of this strategy is very low.

Sensitization Action

With this strategy, the teacher receives and participates. The paradigm is the one-week residential seminar.

About 20 teachers (a larger number is nonproductive) and two resource persons work together. A theoretical framework is sketched and, as soon as possible, group discussion and work are organized.

This is an opportunity for the teachers to discover new ideas, models, methods, techniques, and to realize that they can have an

impact on their practice. The fact that they undertake some individual application during the seminar gives to this strategy a much stronger impact than simple information dissemination.

However, there are two dangers. Most new educational approaches (operational definiton of objectives, mastery learning techniques, programmed learning, etc.) seem easy to understand and apply only if superficially considered. Superficiality can be as noxious as ignorance. One-week hurried, exhausting work is not enough for deep understanding and attitude changes. That is why we call this sensitization: the teacher becomes actively aware of research, evaluation, and development. This can considerably increase his readiness for further learning, but cannot be the alpha and omega of it.

It must always be borne in mind that one or a few seminars do not suffice to transform an artisan into a professional, a medicine man into a physician.

The weight of statistically significant sensitization actions should not be underestimated. A yearly, one-week seminar for the 100,000 younger teachers of our country means 5,000 seminars to be held, and needs, according to our experience, approximately 200 teams of two resource persons (each animating a seminar every other week, which means exhausting work).

Deep Behavior Modification

After more than 15 years of field experience, I have come to the conclusion that the most efficient way (if not the only one) to obtain deep lasting modification of behavior is to work for a long period with the teachers to solve with them some of the problems they identify in their classroom, and to use this opportunity to make them understand and use research findings, development products, and evaluation techniques.

An example might help to make this point. In the sixties, the Ministry of Education asked my Laboratory to organize seminars on programmed learning. The first year was crowned . . . with failure: we were mostly lecturing about all existing teaching machines, linear or branching programs, etc. We had once more forgotten that learning by doing also applies to teachers. With time, the strategy changed fundamentally: after the shortest possible introduction to the subject, we asked the teachers whether they could program a computer, which was not the case. Then we invited them to try a short introductory program course on algorithms and Fortran.

This was a strategy to make them realize that they, too, could learn this way. After that sensitization, we offered to help them

develop a program on contents and problems of interest for their own practice. Doing this, we discovered further that developing programs was an opportunity and motivation for deeper understanding of concepts and for learning new skills and techniques: identification of prerequisites, development and administration of pretests and posttests, data analysis, techniques and corresponding statistics, signification of differences, awareness of aptitude-treatment interaction, . . . When an elderly teacher told us one day that something strange and strong was happening to her: she could no longer teach as before, we realized that one of the most difficult things was happening: a deep change of attitude.

Since then, the same strategy has been repeated many times in many other situations and contexts, and has proved mostly successful.

What is now the feasibility of such an approach if considered in relation with whole or part of the population of teachers to be further trained?

It must be borne in mind that a ratio of one resource person to 50 teachers is desirable to obtain efficient working groups remaining open to innovations and producing instruments, modules, and packages that can be offered to other teachers. This exchange of teacher-made instruments is practically and psychologically of great importance.

Ideally, the resource person must have a good experience with both teaching practice and educational research. We have, however, observed situations where experienced teachers interact with much younger and less experienced researchers, and provided a cooperative spirit animates the group, the results can be excellent.

Depending on their resources, the school authorities can either decide to limit their support to a few innovative groups and hope for a snowball effect, or undertake a much broader action.

To do this, according to our experience, the existence of regional R and D (research and development) laboratories, working in close connection with the schools, is necessary. Well-trained educational researchers are few in most countries. The R and D laboratories must also contribute to this training.

Ideally, at least one per cent of the educational budget should be invested in R and D linked with innovation strategies. In this way, teachers as practitioners can be taught to utilize the best findings of research for the purpose of keeping the profession up-to-date and effectively serving the needs of the society.

Non-Formal Adult Education in Developing Nations

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Introduction

In recent decades there has been a major emphasis, especially in developing nations, on the expansion and improvement of systems of formal education to meet the needs of children and youth and to offer them increased educational opportunity. In such programs most nations are focusing their efforts on the role of basic education as the foundation for the assumption of life tasks and responsibilities as well as the continuation of education at higher levels of schooling. Egypt is among those nations so involved and is, in fact, engaged in major educational reform designed to provide all children in grades one through nine with an education program designed to prepare them for productive citizenship and to provide them with necessary values,

codes of behavior, knowledge, skills, and vocational experience appropriate to the different environments in which they live—urban, rural, desert, industrial.

Since programs of basic education in developing nations, including the program in Egypt, are aimed primarily at children and youth and are a part of the system of formal public education, it is clear that this expansion of educational opportunity and that this focus on certain fundamentals related to life responsibilities does not address the problem of the many millions of adults whose lives have been virtually untouched by formal education. There must be an understanding of the need to establish programs of non-formal education that focus on the essential concerns of adults who, through neglect, poverty, isolation, and other factors, have had little or no opportunity to acquire the essential skills, knowledges, and understandings that are inherent in programs of basic education.

In the belief that Egypt and other developing nations must place a high priority on the development of essential adult non-formal education programs, this paper presents a brief case study and description of one of the world's largest and most successful non-formal adult education programs—Accion Cultural Popular (ACPO), in Colombia, South America. Attention is given in this case study to the effectiveness of ACPO in developing in individuals essential knowledges, skills, and behaviors and in improving the lives of the rural population, to the nature and operation of the ACPO education model, and to the potential that the model has in meeting educational and community needs in developing countries throughout the world.

The case study is based on a three year study of Accion Cultural Popular carried out by Florida State University (FSU). In 1972 the Learning Systems Institute of FSU began to study the problem off non-formal education in developing countries including Jamaica, Korea, Thailand, India, Ethiopia, Indonesia, and most of the countries of Latin America. A number of tentative conclusions were reached: The most successsful programs were making extensive use of relatively low-cost technologies for mass communication, particularly radio and printed media. The highest priority educational area for the most experienced programs was not literacy education (reading, writing, and mathematics), although these were important in regions where formal education was not providing such instruction. The highest priority areas actually were what might be called training in essential survivor behavior—vital skills including such subject matter as hygiene, sanitation, child care, nutrition, family planning, agricultural practices, and more. It was further noted that oral messages, delivered

by radio or in person, and simple graphics could be used to enhance significantly skills critical to an improved condition of living—even for preliterate populations.

In the course of this review of non-formal education programs the FSU staff was particularly impressed by Accion Cultural Popular (ACPO), a program that had for many years achieved a remarkable degree of success in Colombia. Further, ACPO had served as a model for the development of many other radio-based non-formal programs in Latin America. Because of the potential generalizability of the ACPO experience to other developing nations, a decision was made to make an in-depth study of ACPO, its mode of operation, and its ultimate impact on the lives of the target population—the Colombian campesino. In 1976, with the agreement of ACPO and with financial and other support from the United States Agency for International Development, a three year study was undertaken by Florida State University. The final report of this study, *A Field Evaluation of a National Non—Formal Education System: Accion Cultural Popular*, was written by Dr. Robert Morgan, Principal Investigator, Dr. Liliana Muhlmann de Masoner, Project Director, and Dr. Paul H. Masoner, Consultant. One of the authors, Dr. Liliana Muhlmann de Masoner, an Argentine citizen and an educator of more than 20 years experience in Argentina, Venezuela, Colombia, and the United States, died October 17, 1979. *

Accion Cultural Popular: Pioneer Program

Accion Cultural Popular, the focus of the study, is a pioneer in the development of radiophonic education programs aimed at rural audiences. It was founded as a non-profit operation in Colombia in 1947 through the initiative and action of a young priest, Jose Joaquin Salcedo. Concerned with the conditions under which the rural population, the campesinos lived, he was convinced that an educational program directed to the millions of rural inhabitants was essential if they were to develop the capacity to improve their lives and to build reasonable hopes for the future. With at least half the population living in relative isolation from the schools and other institutions providing educational opportunities, it was clear that there was a real need for a new system of learning that would reach millions who did not have even the basic rudiments of education. In the more than 30

* Copies of the report are available in both Spanish and English. For information, interested individuals should write to Dr. Robert M. Morgan, Learning Systems Institute, 206 Dodd Hall, The Florida State University, Tallahassee, Florida 32306, U.S.A.

years of its existence ACPO has developed into one of the largest and most successful non-formal education programs in the world concerned with improving the quality of life of rural development.

ACPO Goals and Purposes

There is a remarkable similarity between the broad and comprehensive goals of basic education as described in the Egyptian educational reform program and those listed by ACPO. The central goal of ACPO is to develop in the rural inhabitant (campesino) the understanding and capability necessary to improve the quality of life and to contribute to the society in which he lives. An analysis of ACPO goals lists areas of high priority: literacy, farm productivity, health, economic knowledge, quality of life, recreation, ethical and religious principles, continuing education and self-improvement, family planning, community activities, and political consciousness. It would appear evident that any expanded definition of the goals of basic education as expressed by Egyptian educators and applied to adults would include most or all of these items as elements in the educational program. One point, however, must be clarified. ACPO is primarily concerned with providing non-formal education to the inhabitants of the rural areas of Colombia. On the other hand the program does not exclude others, including those from urban areas of Colombia. Thus, it would appear that the goals of ACPO can without difficulty be subsumed under a program that focuses on preparation for the tasks and responsibilities of life as well as on involvement in further and more advanced schooling.

It should be noted that the goals of ACPO are the result of both informal and formal needs assesssments of community and individual needs, and are regularly reviewed through formal studies and continuing appraisals by ACPO staffers and community leaders. Although the basic goals of ACPO have remained relatively constant over the years, the specific elements and priorities have changed, and the program elements related to priority areas regularly undergo modification and improvement.

The ACPO Education Model

A brief description of the ACPO education model is stated here to provide a basis for interpretation of the guidelines that form the major part of this monograph.

The model, as it emerged in the study, is systematic and comprehensive (see Figure 1). Central to the model are the daily educational

broadcasts of Radio Sutatenza and the radiophonic schools through which small groups, often families of neighbors, listen to radio classes in a variety of subjects: reading, writing, mathematics, health, nutrition, agriculture, animal care, and topics related to social and ethical concerns. In addition to the formal radio courses, Radio Sutatenza broadcasts cover a range of general education topics including music, drama, news, sports, and other matters. ACPO's daily broadcasts reach all parts of Colombia and are heard by millions of Colombians as well as an unknown number of people in five neighboring countries.

The radio messages and the radiophonic schools function as part of a total system involving printed materials including a set of six basic textbooks (cartillas), a collection of approximately 50 books in a home library (*Biblioteca del Campesino*), and the largest rural newspaper in Latin America (*El Campesino*). Functioning as an integral aspect of the total system are the human resources that constitute the interpersonal component. In the ACPO structure these resources fall in three categories: management and planning, educational development, and field staff. Obviously management and planning constitute a central and significant area in the massive undertaking of ACPO. However, central to the education model are the latter two. Educational development personnel include the professors (profesores) who are responsible for developing the curriculum of the radio education program, for writing radio scripts, for radio teaching, and for writing the radio textbooks, the home library, and the educational sections of the newspaper; the teacher educators (educadores) who make up the faculty of the institutes where field staff are prepared and who develop the institute curricula and operate the instructional program. The field workers, upon whom ACPO places a heavy reliance, include radiophonic school monitors (auxiliares inmediatos), community workers (dirigentes), local leaders (lideres), and field supervisors (supervisores). Special residential institutes offer training for the community workers, the local leaders, and field supervisors. These are the persons who work face-to-face with individual campesinos and groups in educational tasks. Although ACPO has approximately one thousand employees engaged in various tasks, their efforts are supplemented by thousands of volunteers serving as community workers and radiophonic school monitors. Among ACPO field personnel, especially the field workers, are large numbers of campesinos. These individuals, trained for their roles usually in the ACPO institutes, bring to their task not only appropriate knowledge and skills but also understanding of and sympathy for the rural population they serve.

THE ACPO EDUCATION MODEL

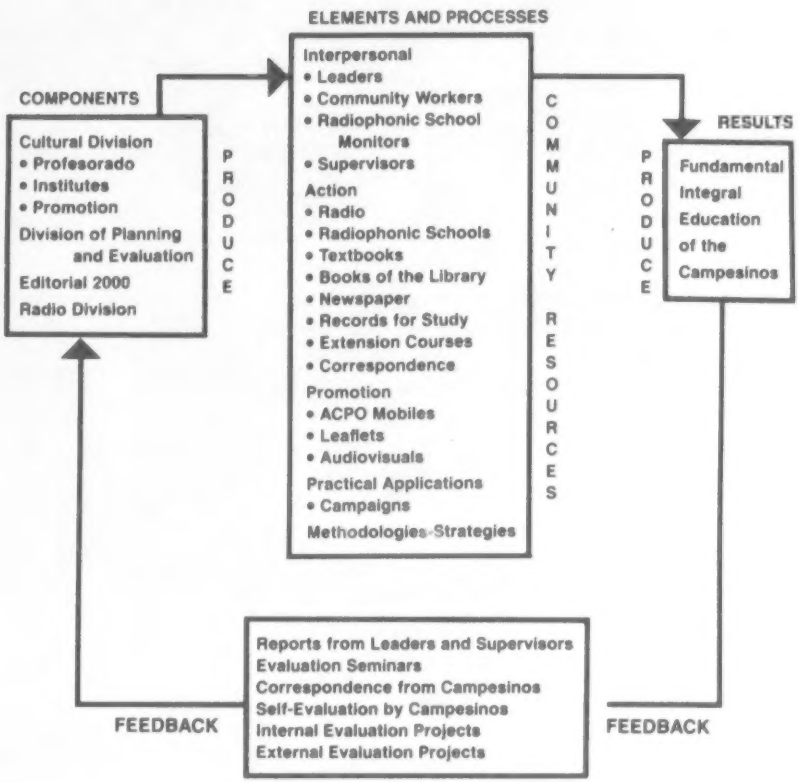

FIGURE 1

Outcomes of the Evaluation

The findings from the analysis and study of the data collected over the three year period of the study and the observations and conclusions of the personnel engaged in the study for a period of more than three years support the conclusion that ACPO programs have

had substantial beneficial effects on the lives of the rural population of Colombia. Study data point to significant improvements in basic education, in health and nutritional practices, and in agricultural and animal care techniques. Although the study focused primarily on the areas mentioned above, there are indications from the study that ACPO has had an important impact on the other aspects of the lives of the campesinos and has made an effective contribution to the improvement of the quality of life for campesinos throughout the nation.

One thing is clear: In the course of a single year ACPO touches the lives of millions of rural Colombians in its outreach to improve their lives and to offer hope for the future. The success of ACPO has led to the development of similar programs in at least 14 other nations in Latin America. Other nations throughout the world have looked to ACPO as a model for the delivery of non-formal education to their own rural populations.

The remainder of this monograph details and describes a series of generalizations or guidelines that have been developed following the completion of the study—guidelines that may be useful to others concerned about offering help and support to rural populations.

Guidelines for Rural Non-Formal Education Programs *

Throughout the three years of the comprehensive study and evaluation of the educational program of the Accion Cultural Popular a number of fundamental questions were always present: How can the ACPO experience be useful to others interested in the development of and/or improvement of non-formal education programs for rural populations in developing countries? How useful is the ACPO education model elsewhere in other settings? To what extent do the outcomes of the study suggest policy, organization, content, and procedures for similar programs in Latin America and in other countries throughout the world?

To have posed questions like these is not to imply that ACPO could or should be transported without change to another location or another country or that other nations could or should develop identical programs without any consideration of regional or local factors that might require important modification. Rather, these questions

* Although these guidelines were developed as a result of a study of a program of non-formal education for rural populations, as pointed out elsewhere, they are clearly applicable to programs dealing with both rural and urban populations.

suggest that ACPO experiences, outcomes, successes, failures can provide useful information to others about to undertake programs of rural non-formal education or faced with the need to review and revise programs already in existence. They suggest that there may be lessons to be learned from ACPO that would be useful elsewhere. Clearly, the extent to which developing nations and the setting in which ACPO was founded and developed have certain characteristics in common points to the degree to which the ACPO experience would be useful in other locations.

There appear to be a number of characteristics that are relatively common among developing nations. Among these are:

1. a large proportion of the population lives and works in rural areas;
2. there is a clear and urgent need for comprehensive rural development;
3. the level of basic education—reading, writing, and numbers—is low;
4. educational services in rural areas are inadequate and in some cases non-existent;
5. the level of economic development is low and there is a high incidence of poverty among rural populations;
6. there is a need for improved knowledge and practice in agriculture and animal husbandry to increase production and thus to improve economic conditions; and,
7. health services are meager and unsatisfactory and the general level of health of rural people is considerably lower than that of the urban populations.

These characteristics were present in the setting in which ACPO was founded and undertook the task of improving the lives of the rural population, the campesinos, of Colombia. To the extent that these same characteristics are present in other locations and other countries is an indication of the utility of a program similar to that of ACPO. Nevertheless, it is important to point out that, in the development of a program of rural non-formal education, account must be taken of differences in population and environmental characteristics, sometimes marked and sometimes quite subtle. These differences do not necessarily eliminate from consideration a program like that of ACPO, but they do suggest the possible need for modifications.

On the following pages are a number of generalizations intended to serve as guidelines for rural/urban non-formal education programs. They were identified by some of those closely associated with the ACPO evaluation on the basis of the outcomes of the evaluation study itself; on the observations and judgments of a number of individuals who for more than three years were closely identified with the project, who worked regularly with the ACPO personnel, and who on almost a daily basis observed the ACPO model in operation; and on the basis of literally hundreds of discussions with members of the ACPO staff as well as campesinos who over the years had been associated with ACPO programs. These generalizations can, it is believed, serve as guidelines for consideration by those responsible for planning, development, and operation of non-formal education programs that are focused on improving the quality of life for rural and urban populations.

Parenthetically, it should be said that the belief that the ACPO study would result in such a set of guidelines was the motivating force behind the extraordinary dedication of all those invloved in the study—the Florida State University team, the ACPO team, and the more than 40 Colombians associated with the project as consultants, case study analysts, field interviewers, and in other capacities. The belief and the anticipation that their efforts could provide assistance to programs designed to offer a better life and hope for the future to millions of rural and urban poor throughout the world was a constant incentive.

Any developing nation, about to undertake the development of a program of adult non-formal education, is faced with a number of questions and/or potential concerns: the importance of needs assessment and goal formulation; the nature of the most effective structure, organization, and control; the focus and content of educational programs; program methodologies and strategies for effective education; the use of mass media; the importance of print materials; the significance of the interpersonal component; the involvement of volunteer staff; training programs for staff; ongoing evaluation of the program; the place of non-formal education in a total system of education. The guidelines listed below, developed from the study of ACPO, deal with these and other concerns and offer suggestions that should be useful in program development.

1. An imperative in the inauguration of a new program of non-formal education or in the review and modification of an existing program

is an assessment of needs of the client population and the nation and region.

2. An essential element in the pattern of program success is the existence of a clear and comprehensive statement of goals that serves as the motivating and directing force of the program.

3. It is important in the interests of the program effectiveness and efficiency that a central office have responsibility for and control of all planning and operations; at the same time those managing the program must be responsive to regional and local conditions and needs.

4. Educational programs and activities should be aimed primarily at adults and out-of-school youth whose prior formal education experience has been considerably limited or non-existent and should provide them with knowledge and skills essential to survival, to productive citizenship, and to continuing improvement in the quality of life.

5. The form and content of the program may include but should not be limited to literacy; it should also include such program elements as agriculture and/or other work activities, health, nutrition, family planning, recreation, community involvement, social and civic awareness, and moral and spiritual values.

6. Program elements, process, methodologies, and strategies should be integrated into a coordinated and comprehensive educational system that recognizes the role of each element in achieving desired outcomes; among these may be the following: radio, radiophonic schools, textbooks, a home reference library, special campaigns, extension courses, newspapers, recordings, instructional personnel, field workers and others.

7. The interpersonal component is a critical element in the program; it includes those who interact directly with the client population in face-to-face situations and those who interact indirectly through communication media. It is important that this interpersonal component include a significant number of individuals from the client population itself—individuals who bring to the program a special knowledge and awareness of client needs and client cultural norms.

8. Radio serves a unique function in rural non-formal education: it spans vast distances in bringing education to the total population; it provides an avenue of communication even to those who are illiterate or semi-literate; it includes in its programming both specific educational content as well as general and cultural education; it has the capacity for round-the-clock programming; and it has the advantage of being relatively inexpensive both to the program and to the client.

9. Print materials—textbooks, reference books, newspapers—are an essential element in a systematic learning plan; appropriately written, they provide the client with simple and easy access to knowledge; they are a relatively permanent repository of information and study materials; they are an important component of a learning program that may involve other elements such as radio and instructional personnel; they offer an opportunity for a personal program of continuing study; and they enable the original learner to share his knowledge and learning experiences with others.

10. Professional personnel in the program must be chosen with extreme care; requisite qualifications should include appropriate education and experience related to relevant professional fields; prior successful experience in non-formal education; evidence of clear commitment to the improvement of life of the client population.

11. Programs can, through a plan of volunteer staff, considerably expand educational opportunity and increase the numbers of the client population served. While volunteer staff are not an essential requirement, it is clear that most programs with limited financial resources must turn to volunteers if the clients are to serve adequately. It is important to recognize the need for careful selection of volunteer staff, for pre-service and in-service training, for inclusion when possible in volunteer staff of members of the client population.

12. All personnel of the program should undergo carefully designed programs of training. It is important that there be both pre-service and in-service components that will assure the competence of individuals for the tasks for which they are responsible, will provide for continuous upgrading of job performance, and will make it possible for qualified individuals to develop knowledge and skills needed for advancement to more demanding and more important assignments.

13. The non-formal education program should relate to and involve other systems of education and support to the client population—government, religious organizations, private organizations, and the formal education system—so that all available support services can operate to a maximum degree of effectiveness as an integrated and functioning whole in providing education and assistance to the client population.

14. Programs should develop and maintain an ongoing system of evaluation, formal and informal, internal and external, that will provide for a constant monitoring of the total program and its outcomes and that will result in appropriate modifications and improvement.

Concluding Comment

Those involved in this study of ACPO over a three year period believe that the outcomes of the analysis and evaluation of one of the world's most effective programs of non-formal education aimed at improving the conditions of life of rural and urban populations in a developing setting can be used effectively by those nations, agencies, and individuals concerned with the establishment and/or improvement of similar programs elsewhere. Further, it is believed that such programs are an important component of a total education reform movement which places high emphasis on the completion of the elements of basic education by all segments of the population. Non-formal programs, like ACPO, effectively complement formal education programs and reach a significant segment of the population not usually served by formal education efforts. For Egypt and for developing nations throughout the world, within the framework of the ACPO education model and identifiable within the experience of more than 30 years of operation of the model, are many useful lessons learned and examples worthy of consideration. The guidelines stated here and others that can be drawn from the study can be used to give old and new programs the effectiveness that is needed to bring to rural and urban populations in developing nations a better life and renewed hope for the future.

The Development of Competency Based Teacher Education (C.B.T.E.)

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Introduction

When all educational factors are thoroughly considered, the most basic element about "basic education in the real world" is the quality of the teacher and teaching involved. Nothing can be more inhibiting to pupil learning than an incompetent teacher and inadequate teaching ability. Most discussions and actions about good, basic education are limited to changes in the curriculum, the improvement of teaching textbooks and materials, the use of modern educational technology and media, and the provision of pleasant, conducive physical surroundings for the learning process. It is also absolutely necessary to have expert, competent classroom teachers. However, the supplying of such individuals in the "real world" is fundamentally based on assuming that any person experiencing a program of teacher education and/or holding an academic degree will be able to teach children in the classroom with some degree of professional and academic success. There never has been much of anything developed in the way of evidence to support this belief; the obvious is accepted and let go at that. This situation, unfortunately, leaves the most important ingredient of successful basic education to chance.

The establishment of the competency-based teacher education (CBTE) movement and general educational accountability concerns in

education have put a considerable focus on teacher performance and competency. What teacher educators used to take for granted about successful teacher behavior and resultant pupil outcomes is no longer accepted unqestioningly. Dr. Donald Medley, a prominent American researcher on teacher effectiveness has said, "Only when we know why a teacher is effective—as well as how—can we decide how best to train teachers." Medley has made the situation quite clear. It is one thing to develop programs to prepare, supposedly, competent teachers, but it is quite another matter to determine if the products of these programs are indeed competent professionals and effective in the probable cause and effect relationship between teacher behavior and pupil behavior and learning.

The College of Education at the University of Toledo has long been interested in the development of teacher competency as well as the necessary research/evaluation effort to determine if our teacher preparation efforts result in a teacher product truly well educated for and able in a classroom situation. The College of Education first designed and then implemented a program of teacher education called Competency Based Teacher Education to provide the teacher training which would result in the development of well qualified, excellent teachers. A corollary aspect of the effort to address teacher effectiveness was the creation of a research/evaluation program to learn if the products produced by the new teacher education curriculum were indeed competent and effective in the classroom. Both of these matters will be addressed in this brief paper. A more comprehensive discussion of the subject can be found in the monograph titled, *Research and Evaluation in Teacher Education: A Concern for Competent, Effective Teachers*, authored by George E. Dickson and William Wiersma, Jr., and published by the Center for Educational Research and Services, College of Education, University of Toledo, Toledo, Ohio, U.S.A.

CBTE — A Response to the Concern for Teacher Effectiveness

The College of Education at The University of Toledo established a comprehensive competency-based teacher education program design in 1968. By 1973, Option 4 of that design was fully implemented for the basic elementary teacher education program. Further, a secondary CBTE program was developed and became operative as an outgrowth of elementary CBTE efforts. The implemented programs synthesized a considerable amount of knowledge about society, the learning process, teacher methodology, educational technology, in-

structional organization, and educational research. To understand briefly what occurred, some fundamental knowledge of CBTE is necessary, as well as a summary of The University of Toledo CBTE program.

Competency-based teacher education (CBTE) is a type of teacher training that focuses on the student's acquisition of specific teaching competencies. Competencies, or the knowledge, skills, attitudes, and values that prospective teachers are expected to have on completion of a teacher education program, are specified as a set of learning objectives. These objectives are stated behaviorally or in such form that their achievement can be produced and observed as learner behavior and knowledge. With such objectives are established the minimum levels for their achievement, indications of the standards or "criteria" of successful attainment. The instructional program is delivered through modules where the teacher competencies are specified through the use of behavioral objectives, learning activities are suggested for the objectives specified which will help the student achieve a minimal level of competence, and evaluations of student performance and knowledge determines whether the criteria of successful achievement of the objective(s) are achieved.

The major features of CBTE are: a systems approach to teacher education; the use of behavioral objectives; the use of instructional modules or modularized learning experiences; a concern for competency-based criteria; personalized and individualized instructional strategies, an emphasis of field experiences; and, a method of systematic evaluation of both the student and the program. (A more detailed explanation of CBTE is found on pages 14-19 in the monograph referred to above.)

The University of Toledo's CBTE Program

The CBTE program at The University of Toledo is a single, comprehensive effort to bring about educational change in the way elementary and secondary teachers are prepared, as well as educational change in schools where these teachers will likely teach. Such ideas require certain things of the teacher training process. The program is field-based (related to the real world of teaching in classrooms) to bring reality to teacher preparation. The broad goals of education are clear and firm so that the accomplishment of program goals and the behavioral objectives derived from them can be demonstrated. The program of teacher training specifies the knowledge, skills, attitudes and values (competencies) needed by teachers. The

program provides alternative means and varying lengths of time for reaching such competencies but all trainees meet a number of common educational objectives. The attempt is made to create a teacher training curriculum for teachers and schools which meets the individual differences of learners through individualizing the instructional process. The program incorporates the educational innovations of competency-based education, and individually-guided education.

The Toledo CBTE program has ten basic goals of teacher education which are behaviorally stated and cover the basic tenets of the American educational system. Each of these goals begins with the phrase, "Each teacher should be prepared to employ teacher behaviors which will help every child, etc.," and are found in detail in the monograph mentioned above.

The ten goals were examined in relation to five contexts which represented conditions of major importance to teacher education. The contexts were: instructional organization, educational technology, contemporary learning-teaching process, societal factors, and research. The use of these contexts enabled a breakdown of the basic goals into various subjects and topics for more detailed behavioral objectives.

Behavioral objectives were prepared for each of the five contexts, and these were stated in terms of specific student/pupil behavior(s) which can be observed and measured. The behavioral objectives contained and expressed the basic competencies required of competent teachers.

Instructional modules were then developed which incorporated the behavioral objectives. A module is a short course or topic outline covering anywhere from an hour to several weeks of instruction and consists of a behavioral objective(s), a rationale to explain the signifcance of what is to be learned, suggested instructional activities, materials to be used, and evaluation procedures. After being identified and created, modules are reviewed and sequenced in the usual course structure common to American higher education. The number of modules placed in a course depends upon the average number that can be completed by students in an instructional quarter of ten weeks.

Space does not allow a complete description of all components of the CBTE program. (A more complete description of the program can be found in the monograph listed above.) However, it must be noted that the CBTE program established over ten years ago at The University of Toledo, while having matured and enjoyed considerable success, has constantly been subject to change.

Evaluating Teacher Competencies

The University of Toledo program developers and operators knew that the basic idea of CBTE required concern and action for empirical student and program evaluation based on competency attainment. Once the necessary teaching competencies are identified for any teacher education program, teacher education students in teaching situations can be measured on the extent and proficiency of their teaching performance as that behavior reflects the program competencies considered. Such teacher effectiveness research in undergraduate teacher education is possible, although complex, and it must be attempted.

Research on teacher competence, teacher performance, and teacher effectiveness has been productive in the decade of the 1970's. Researchers are now concluding that a research data base for the content of teacher education has been developed and is substantial enough to provide direction for teacher education efforts. Jane Stallings, in a recent issue of "Educational Research," has perhaps expressed this point of view best:

> The research on teaching has been driven not so much by theory as by a curiosity about the nature of effective and ineffective teaching processes. In all cases, the researchers went to classrooms and observed what teachers and students were doing. They studied what was occurring in classrooms where students were making gains as well as where students were not making gains. Some of the studies used qualitative data, while others used quantitative data; some were conducted concurrently, others sequentially. The communication among those who conduct research on teaching tends to be frequent and constructive. As new studies are mapped, methodology and findings are compared to explore new frontiers of the teaching and learning territory. Thus, a body of knowledge regarding the management of time, tasks, and students is accumulating and can be useful in guiding the training of inservice and preservice teachers.

Some useful distinctions have been made between the terms teacher effectiveness, teacher performance,and teacher competence. Teacher effectiveness is defined as the impact the teacher has on the pupils the teacher teaches. Teacher performance is defined in terms of the teaching behavior of the teacher on the job. Teacher competence is

considered the repertoire of professional knowledges, professional skills, and professional value positions the teacher brings to the job.

There are five points in teacher preparation and service where teacher assessment can occur to provide information on teacher competence, performance, and effectiveness.

The first assessment point concerns the characteristics that an individual brings to teacher preparation and these can be measured when a student first declares that he/she wishes to enter the teaching profession.

A second assessment situation occurs at the end of the teacher training experience in what is known as the student-teacher situation where teacher competence can be directly assessed at the culmination of teacher training experiences. A third assessment concerning teacher performance is an examination of actual teacher behavior on-the-job, the first and subsequent early years of inservice teaching. The influences which can affect such teacher performance are the pre-existing teacher characteristics, previous teacher training experiences, and two additional factors which have not heretofore been involved—the situational context in which the teacher works and how the teacher feels about the job, teacher attitudes/motivation.

The fourth and fifth assessment points concern the measurement of teacher effectiveness or the evaluation of teachers, not strictly on the basis of their teaching behaviors, but rather on the learning experiences and educational outcomes of their pupils. Specifically, the fourth assessment assumes that teacher assessment is effected, directly or indirectly, by a variety of influences, only one of which is teacher performance. Such influences are pupil motivation and various contextual variables intrinsic to or impinging upon the learning situation. The fifth, final assessment of teacher effectiveness is the measurement of pupil knowledge, abilities, and/or attitudes after instruction. Again, some of these outcomes are attributable to the teacher, but other variables are also present, including those in another contextual situation which interact with pupil learning experiences to determine how much a pupil will learn from such experiences.

The research effort going on at The University of Toledo to identify and measure teacher competencies is that occurring at the second assessment level. Information will now be presented to indicate how such assessment occurs and the results of such activity.

Observation Systems to Measure Competencies

Two observational systems have been utilized: high inference observation and low inference observation. The high inference obser-

vation system is that developed at the University of Georgia for the State Department of Education in Georgia which requires the observer to make substantial inferences as to what competencies are being demonstrated and the quality of such demonstration. The behavior of the teacher is not recorded. An observer works from a stated set of indicators and descriptors for the competencies to be measured, and then makes a judgement as to how well teacher performance fits the indicators/descriptors. Such a system requires a good deal of observer judgment about what is occurring in the classroom. A scaled score of one to five is used with the indicators/descriptors and the scores derived for each competency are summed with a mean computed. The University of Georgia instrument called *The Teacher Performance Assessment Instrument* (TPAI) provides our institution with information on 45 of our basic 49 teacher education program competencies.

In contrast to high inference observation, low-inference observation, utilizing the *Classroom Observation Keyed for Research* (COKER) instrument (this instrument was formerly called Georgia Assessment of Teacher Effectiveness, GATE) involves specific teacher/student behaviors which are defined with sufficient precision that observers will agree as to whether or not they have occurred. The process of low-inference observation is one of recording behaviors that have been observed; no more, no less. Later, the incidence (or lack thereof) of individual behaviors are usually combined, according to some type of scoring algorithm, into scores on competencies. The scoring is objective, it can be done by a clerk or a computer, and no inferences are required in translating the observation into scores once the algorithm has been defined. The COKER instrument provides The University of Toledo information on 22 of its basic 49 program competencies. A listing of the competencies assessed may be of interest to readers.

Competency Statements

Topic: Planning, Teaching Materials/Equipment, and Evaluation.

1. Plans units of instruction.
2. Plans instruction at a variety of cognitive levels.
3. Can state pupil outcomes and/or student course objectives in behavioral terms (behavioral objectives).
4. Has realistic expectations for the learning process and student readiness for learning.
5. Gathers, organizes, and evaluates pertinent information about students for effective instruction.
6. Identifies and evaluates learning problems of students in content area being taught.

7. Keeps informed of current professional/subject area literature and curricular learning materials/resources available.
8. Knows how to select (or construct), organize, and use appropriate instructional materials and equipment to facilitate learning activities.
9. Uses criteria and effective procedures for determining pupil achievement of learning objectives.
10. Selects/develops appropriate assessment techniques and instruments for instructional activities.
11. Collects, quantifies, and interprets data from appropriate assessment instruments.
12. Maintains evaluation records.
13. Engages in professional development by obtaining and analyzing evaluative information concerning the effectiveness of instruction.
14. Uses information about the effectiveness of instruction to revise it, with possible curriculum modifications.
15. Relates to accountability issues concerning responsibilities to students, parents, and the instructional process.

Topic: Instructional Strategies, Techniques, and/or Methods.

16. Uses a variety of instructional strategies.
17. Uses convergent and divergent inquiry strategies.
18. Develops and demonstrates problem-solving skills.
19. Establishes transitions and sequences in instruction which are varied.
20. Modifies instructional activities to accomodate identified learner needs.
21. Demonstrates ability to work with individuals, small groups, and large groups.
22. Structures the use of time to facilitate student learning.
23. Uses a variety of resources and materials.
24. Provides learning experiences which enable students to transfer principles and generalizations to situations outside of school.
25. Provides assignments/learning opportunities interesting and appropriate to different ability levels of pupils.
26. Demonstrates knowledge in the subject areas.
27. Demonstrates self-direction and conveys the impression of knowing what to do and how to do it.
28. Works effectively as a member of an instructional team.
29. Uses acceptable written and oral expression with learners.
30. Adjusts components of the physical/learning environment over which the teacher has control to facilitate learning.

Topic: Communication with Learners.

31. Provides group communication (cooperation, interaction, learning from others) experiences for students.
32. Uses a variety of functional verbal and nonverbal communication skills with students.
33. Gives clear directions and explanations.
34. Motivates students to ask questions.

35. Uses questions that lead students to analyze, synthesize, and think critically.
36. Accepts varied student viewpoints and/or asks students to extend or elaborate answers or ideas.
37. Demonstrates proper listening skills.
38. Provides feedback to learners on their cognitive performance.
39. Expresses a positive personal attitude toward the teaching profession.

Topic: Learner Reinforcement-Involvement

40. Maintains an environment in which students are actively involved, working on-task.
41. Implements an effective classroom management system for positive student behavior (discipline).
42. Uses positive reinforcement patterns with students.
43. Assists students in discovering and correcting errors and inaccuracies.
44. Develops student feedback, evaluation skills, and student self-evaluation.

Topic: Professional Standards

45. Accepts responsibility, is dependable.
46. Evidences cooperation with others (teachers, administrators, support staff, parents, etc.) in planning and teaching.
47. Acts as an appropriate model in terms of ethics, attitudes, and values.
48. Attends teacher and other professional meetings.
49. Understands and follows school law, policies, and procedures and their effects on teachers, and teaching, including professional conduct standards.

Conclusions

On the basis of complete data analysis, some basic conclusions can be reported:

1. It is possible to synthesize the content of a teacher education program into a set of identifying competencies intended to be developed by the program and then measure the program's competencies through the assessment of student teacher behavior, with some degree of confidence. Such measurement provides information about the adequacy of the program as well as the competency of the students graduating from it.

2. University of Toledo student teachers scored well above the midpoint on the high inference assessment instrument (TPAI) which indicated that the program competencies established for them were being demonstrated in student teaching.

3. Because the scoring procedures for the low inference instrument (COKER or GATE) rely on comparisons with other teacher groups (scaled scores are not used), The University of Toledo student teachers showed remarkable consistency in their teaching performance across all competencies measured. In essence, their competency scores were more like those of experienced teachers (one or more years of teaching) than the scores obtained for student teachers from other colleges.

4. A factor analysis of the high and low-inference instrument data supported the general contention that there were discrete, underlying traits or constructs of teaching. The 49 competencies did not collapse into a single, omnibus factor.

5. When the same competency was measured on both the high and low inference instruments there was a lack of correlation between the scores obtained. The situation likely reflects a difference in measurement approaches, although the measurement of teacher competency should not be instrument-dependent. More research is being conducted concerning this finding, with new data available since the pilot study was completed.

6. Information about teacher competencies can be obtained for student teachers as a group and individually. Comparisons between individuals can be made for specific competencies, or by student teacher groups on specific competencies. Profiles of competencies of individuals can be used for diagnostic purposes. Individual competency successes and difficulties can be identified and provided to student teachers during their student teaching as cumulative means of student teaching evaluation. The evaluation of student teaching can become more objective and predictive of teacher success using high and low inference measures.

7. The information obtained for groups of student teachers can be used for purposes of standardizing the mean scores for University of Toledo student teachers and to note the deviations from the means in terms of specific competencies. From such information, questions can be raised concerning the effectiveness of the teacher education program, where it can be improved, and what needs to be done to improve it.

8. The type of competency study and assessment described in this report can be extended to teachers in regular teaching positions as a follow up of an institution's graduates. Further, such effort could be combined with research to relate pupil achievement and long-term gain to teacher competency measures, which is not possible in a short term student teaching situation.

It is obvious that the more we understand about teacher performance, the better the skills of pedagogy can be developed to improve that performance. A useful research/evaluation procedure has been pioneered at The University of Toledo with its unique competency-based teacher education program. The dual efforts of innovative program and research/evaluation development have resulted in the production of decidedly better, more competent teachers which is basic to educational improvement worldwide.

Educational Research and Practice in Japan

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State of Educational Research and Practice

In Japan, the research projects on contents and methods of elementary and secondary school education are conducted in various forms by educational researchers, scholars, elementary and secondary school teachers, and others. In terms of the educational practice at the elementary and secondary schools, the educational research projects in Japan can be generally categorized into the following three patterns: first, the educational research pursued by teachers themselves who are actual practitioners of elementary and secondary school education; second, the practice-oriented educational research carried out by full-time educational researchers; and third, the basic and theoretical educational research undertaken by the university professors and researchers.

Educational Research by School Teachers

The most outstanding characteristic of the educational research in Japan is that the first pattern of the educational research mentioned above is most widely, actively, and systematically conducted by school teachers themselves.

The educational research of this type is rooted in the teachers' enthusiasm in fulfilling and developing their educational activitites.

This is mainly subject-matter teaching and carried out on an individual-school basis for the purpose of improving daily instructional methods under the leadership of the school principal and senior teachers. In addition, a number of local voluntary teacher study organizations are formed and they also contribute to the promotion of research activities. These teacher organizations are generally formed by subject-area such as Japanese language, mathematics, social studies, etc., at the community and/or prefectural level. There exist more than 500 such organizations throughout the country at the prefectural level. Not a few teachers are also members of the nationwide educational research organizations which are initiated mainly by scholars and professional researchers, and they conduct their research activities in collaboration with member scholars or researchers.

Regional as well as nationwide educational research organizations hold their annual study meetings to provide their members with opportunities for presenting and discussing their research outcomes. Research reports are usually published in the form of journals.

Elementary or secondary schools attached to teacher training universities or education departments of general-type universities and the experimental schools specially designated by the Ministry of Education or local boards of education are conducting various educational research projects which are given special importance.

In Japan, there are at least one or more national teacher training universities or departments of education at national universities in 47 of the prefectures. Each of these teacher training universities or departments of education runs its own attached elementary/secondary school so as to conduct experimental or pilot educational practice or research. (At present, there are 71 attached elementary schools and 76 attached lower secondary schools.) The role played by these attached schools for the promotion of curriculum research and development is quite vital.

In addition, the Ministry of Education and prefectural/municipal boards of education request every year, in order to contribute to the improvement of educational contents and methods, that a number of elementary and secondary schools carry out research on instructional methods for specified subject-matter teaching or educational programs for one or two years. These schools are called designated study schools and there are currently more than 800 such schools designated by the Ministry of Education. The Ministry of Education receives study reports from these schools which are utilized in revision works of the courses of study (national curriculum standards).

Educational Research by Professional Researchers

The second pattern is the educational research conducted by full-time educational researchers. There are nearly 500 educational research institutions established by prefectural or municipal governments. These institutions are conducting, on one hand, various practice-oriented research projects in association with local schools and classroom teachers, and organizing, on the other, inservice training courses for local teachers.

Many of these institutions were established during the post-war education reform period with the purpose of democratizing and rationalizing educational programs. In 1948, a National Federation of Educational Research Institutions of Japan was formed as a national organ of these institutions. The Federation has been strengthening cooperative ties among member institutions, and at the same time facilitating various nationwide joint research projects. The membership now reaches about 210.

The Federation organizes an annual study assembly where 40 to 50 research reports are submitted. It also holds study meetings regularly for each joint research project.

A variety of joint research projects have been initiated by the Federation so far. Their themes were, for example, "Improvement of Instructional Methods," "Study on Moral Education," "Education for Working Youths and Their Life Consciousness," "Family and Children," "Systemization of Education," "Basic Study on Scholastic Achievement and Career Selection," etc.

National Research Institutes

Besides these local institutions, there are the National Institute for Educational Research (NIER) and the National Institute of Special Education (NISE). The former was established by the national government in 1949 when the post-war educational reform was in progress. It aims at conducting practical and basic research on education with a view to promote educational reform on the basis of scientific educational research. The National Institute of Special Education was established in 1971 for the purpose of conducting necessary research for the promotion of special education. It has its attached school for severely handicapped children.

NIER has been actively promoting research which contributes to educational reform and innovation. Its areas of research are not confined to school education, but cover educational systems, education history, educational thoughts, comparative education, and others. Ex-

amples of themes relating to compulsory education among on-going major research projects of the institute are: "Research on ability development and achievement level of language and mathematics during the period of elementary and lower secondary schooling," "Basic study on promoting development of slow learners," "Development of environmental education curriculum," and others.

NIER has, at present, more than 70 professional staff and nearly 30 administrative staff.The research projects of the institute are not necessarily implemented by its staff only. The institute often invites university professors and researchers from other organizations to participate in its joint research projects. The Institute also receives the cooperation of local research institutes in the implementation of research activities through the network of the National Federation of Educational Research Institutes.

NIER also plays the role of a national center for international education cooperative activities with UNESCO and other international organizations. It organizes international seminars and workshops on education, promotes the exchange of educational information and experiences, and facilitates personnel exchange in education.

Theoretical Educational Research by University Professors and Researchers

Finally, the third pattern of educational research in Japan is the theoretical research conducted by university professors and professional researchers. Most four-year national universities (about 90 in number) in Japan have educational departments or divisions whose teaching staff are engaged in theoretical as well as practical studies of education in addition to their regular teaching. Some universities establish research facilities such as educational technology centers, science education study centers, university education centers, etc., in which research staff conduct specialized research projects.

There are more than 300 four-year private universities in Japan. Many of them offer teacher training courses and also conduct educational research programs.

Furthermore, there are about 40 nation-wide academic educational associations. Each of them organizes study meetings and provides the members with opportunities to present the outcome of their research projects. In recent years, an increasing number of associations encourage joint research projects among their members or hold symposia on specific educational topics.

Educational Research and Practice: 1868-1945

Even during the feudal period, prior to the Meiji Restoration of 1868, 20% of all children received education in one form or another. There were many *Terakoya* (elementary level school for commoners) and *Hanko* (secondary level institution established by local clans) throughout the country. The modern education system was inaugurated 100 years ago and today, nine-year compulsory schooling comprises 94% of upper secondary school-aged youth and 38% of all higher education or university-aged youth. While the government investment in education was immense and administrative measures were positive during this period, no one can overlook the contribution of educational research in upgrading the quality of education.

Educational Gains

The characteristics of educational research during the period (1868-1945) could be summed up in the following way: positive introduction and adoption of the western educational research and practices; promotion of practice-oriented research programs in parallel with the above; and a vital role played by the national government interlinking educational research and practice.

Foreign Influence

Since the 1870's, the Ministry of Education has tried to collect information on education in Europe and the United States in order to send many young Japanese to these countries to research educational methods. During the early stage of the Meiji era, new education practices such as a monitorial system in the UK and USA, an object teaching method for innovation of instruction, and progressive educational thoughts of H. Spencer, T.H. Huxley, and others, were introduced. Many foreign educational documents were translated and published in Japanese, and educational information from other countries was introduced through journals.

The outcome of educational research and practice (mainly in the UK and USA) was disseminated among educationists throughout the normal schools which the Ministry of Education had established in each prefecture for the expansion of education.

Elementary schools attached to normal schools were considered models to be imitated. It is worthy to note that new practices tried out in those attached elementary schools spread over the elementary schools in the neighboring area.

In the 1890's, elementary schools were established throughout the country and the number of pupils increased, which in turn required more systematic and effective ways of teaching. In place of influences from the UK and USA, the teaching methods and practices of the German Herbart school attracted the attention of educational researchers. In line with this, the German pedagogy was actively studied at the imperial university and higher normal schools.

Research and Organization by Teachers

During this period, in parallel with the study on foreign educational research and practice, school teacher themselves began to organize voluntary study groups and seminars in order to find solutions to problems encountered in teaching. Main fields of study taken up in these teachers groups were on classroom instruction methods for lower elementary grades and individualized instruction methods for upper elementary grades. Findings of these studies were disseminated among local elementary schools under the guidance of local educational administration officials and by means of research publications.

The state adopted textbook system, which was enacted in 1904 and played an essential role in homogenizing the quality of education of the country and influencing the undertakings of research and practice. The textbooks compiled and published by the national government were uniformly used in every school throughout the country as the sole teaching material.

After the enforcement of this system, the practice-oriented research by school teachers tended to confine itself to the effective utilization of given teaching materials. Ways of questioning and of writing on blackboards, methods of communication, and other practical teaching skills were developed by studies of classroom teachers.

The educational research in Japan entered into a new era at the beginning of the twentieth century. In place of the German method of teaching, educational thoughts and research of J. Dewey, E. Key, and others were introduced. In contrast with the teaching method of inculcation during the Meiji era, educationists paid more attention to an instructional method which enabled children to learn by themselves.

Japan had by then more than 50 years of experiences in modern school education. Therefore, the educational improvement began to be tried out not only on the basis of the influences of new thoughts and practices from abroad, but also on the basis of traditional ways of thinking. During this period, instead of the western method of learning by debates, unique education methods such as the use of composi-

tion on life experience (since the composition was regarded as useful for better self-recognition) were developed and disseminated.

Thus, during the period from the Meiji to the Second World War, the educational research in Japan began with the direct transplantation of foreign research and practice and then gradually proceeded to the undertaking of educational research based on the Japanese tradition. At the same time, the magnitude of research projects and practices was gradually shifted from small-scale to large scale, namely, from community-centered or individually initiated to nationwide research projects.

Educational Research and Practice in the Post-War Period

Education in post-war Japan was strongly influenced, needless to say, by education in the United States, in particular, educational research and curriculum development. The latter focused on the creation of social studies which integrated Shushin (civics), geography, and history of the pre-war period. A learning method based on a child's concerns and interests was introduced, and the problem-solving method was widely adopted.

The research on these new educational phenomena was carried out by professional researchers, university professors, and experts in the Ministry of Education. Because they were carried out with insufficient provisions for time in preparation and implementation, however, it is difficult to say whether the results produced were effectively transplanted into classroom practices. The nationwide NIER survey made at that time found that the teacher's main concern was on the method of organization of child-centered learning activities and instructional contents. Also, the survey report pointed out that the basic scholastic level was lower, mainly because of integrated curriculum organization.

Curriculum Research: Structure

During the first half of the 1950s, new education was criticized and the demand for systematized learning of knowledge and skills emerged. Frequent study meetings were organized at national as well as regional levels and curriculum specialists discussed the matter exclusively. Voluntary educational associations also pointed out the necessity for systematic learning and the attainment of basic scholastic ability.

The Ministry of Education promulgated, on the basis of these views and suggestions, a new curriculum standard. The following were the main issues of revised curriculum standard: the ensuring of sequential learning of knowledge; the establishment of a period of moral education; and the inclusion of sub-courses (history, geography, and civics) in social studies.

Curriculum Content

In the sixties, the attention of researchers was given to curriculum content rather than structure. Through research, for example, it was found that systematic and sequential science instruction best develops the student's awareness of science in nature and society.

In addition to the work done by full-time researchers, classroom teachers also became active in curriculum research. Enthusiatic teachers tried to reveal the learning processes of children by keeping records of classsroom activities. These studies were usually carried out with the participation of university professors and staff from research agencies as well. The research projects conducted jointly by NIER and local institutions contributed to the progress of the study on instuctional activities. As a result, the teaching-learning processes were scientifically explored, and new ideas on evaluation methods were brought about.

In the seventies, research continued, with particular emphasis placed on the study of teaching-learning methods in response to individual abilities and aptitudes. Also, much attention was paid to the study on audio-visual instruction, and other educational technology. At the same time, a need for curriculum study was called for with the introduction of environmental education, education for international understanding, work-experience programs, etc., which require an interdisciplinary approach. Are educational programs to be treated as a separate subject area, or are they to be integrated into existing subject areas? Many curriculum questions require further research.

Summary

In reviewing the development of school education in Japan over the past 100 years, a dominant factor has been the enthusiasm of classroom teachers towards improving education. It is the questing mind of the individual teacher that keeps research active in Japan, with the important support of government education officials and full-time researchers.

National educational policy needs to foster the teacher's morale and discipline, and to provide teachers with outstanding exampies of educational practices. In addition, it is important to mobilize educational research activities so as to ensure the understanding of educational thoughts and trends.

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